Democracy in the Workplace and at Home:

Finding Freedom, Liberty and Justice in the Lived Environment

by

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ABSTRACT

The dissertation explores how participants view the relationships between democratic principles such as freedom, liberty, justice, and equality in work and home environments and their impact on the health and productivity of people living within these environments. This information can be used to determine the gap between legal democratic instruments established the published laws and rights and the participants understanding and awareness of these rights.

The first step in effectively capturing information from the participants involved developing a virtual ethnographic research system architecture prototype that allowed participants to voice their opinions related to democracy and how the application of democratic principles in various lived environments such as the workplace and home can affect their health and productivity.

The dissertation starts by first delving into what democracy is within the context of general social research and social contracts as related to everyday interactions between individuals within organizational environments. Second, it determines how democracy affects individual human rights and their well-being within lived environments such as their workplace and home. Third, it identifies how technological advances can be used to educate and improve democratic processes within various lived environments such that individuals are given an equal voice in decisions that affect their health and well-being, ensuring that they able to secure justice and fairness within their lives.

The virtual ethnographic research system architecture prototype tested the ability of a web application and database technology to provide a more dynamic and longitudinal methodology allowing participants to voice their opinions related to the relationship of democracy in work and home environments to the health and productivity of the people who live within these environments. The technology enables continuous feedback as participants are educated about democracy and their lived environments, unlike other research methods that take a one-time view of situations and apply them to continuously changing environments.

The analysis of the participant's answers to the various qualitative and quantitative questions indicated that the majority of participants agree that a positive relationship exists between democracy in work and home environments and the health and productivity of the individuals who live within these environments.

DEDICATION

I would first like to dedicate this dissertation to my Mother who dedicated her life to helping others as a high school counselor and for always encouraging me to never be afraid of learning and to find my path in life.

I would next like to dedicate this dissertation to my Father with whom I enjoyed our many philosophical discussions on life and social issues and who also encouraged me and supported me in my continued pursuit of education.

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PREFACE

Have you ever felt that you had no say in how your work assignments were managed or the amount of time you would be allowed to complete an assignment? Have you ever felt stressed when you were not allowed to participate in the decisions that affected your work and home life? Have you ever felt you were treated unfairly or unjustly and had no voice in what options you had in seeking justice in your work or home environment? Have you ever felt frustrated that in a democratic society you seem to have no freedom or liberty or justice at work and at home? These are all important realizations that point to a lack of democracy in our lived work and home environments resulting in feeling a loss of freedom, liberty, and justice as they relate to the human rights we seek in our everyday lives.

After nearly thirty years of college, observations in work and home environments and discussions with hundreds of individuals related to their work and home concerns, I have become aware of major conflicts that exist between an individual's daily life and the democratic principles of freedom, liberty and justice. Many people I have talked with and observed over the past thirty years seem less aware of the founding principles of human rights in a democratic society than the socialized definitions of success through commercialized gains in money and social position. Through extensive research in workplace democracy and individual rights, I have become more aware of the conflicts between the concepts of democratic rights and the socialized importance of material gain. I have found that people are often unaware of their rights in the workplace and at

home and when they do become aware, they often cannot afford legal counsel or fear losing their jobs or relationships if they attempt to protect their rights to life, liberty, property, and happiness. These conditions lead to great stresses in their lives.

A number of years ago I started having a lot of health problems and after my doctor had performed a number of tests, she asked me if I was having any stress in my life. After reflecting on the times when I felt sick versus when I felt better, I started to become aware that there was a pattern related to the level of stress in my life and my health issues. I have done a great deal of research related to workplace democracy and its ability to create less stressful and more liberating work environments along with extensive research on productivity as it relates to freedom and happiness in my various graduate research projects. In my concern for how people are impacted by stressful, non-democratic home and work environments, I have decided to research the effects of these environments on individual freedoms, health conditions, happiness, and productivity.

Through my research I show how the perception of a lack of democratic freedoms in the workplace and at home can create stressful work and home environments where individuals struggling for greater security in their lives are making their lives less liberating, more controlled, and driven more by success based on wealth and position and less by health and happiness. This leads to my research question related to the impact of democratic principles such as freedom, liberty, justice, equality, in work and home environments on the health and productivity of individuals within these social environments (Figure 14).

The socio-economic impact of the problems related to stress in the workplace due to the lack of democracy in these environments is identified in the studies conducted by the National Institute for Occupational Safety and Health and the American Psychological Association (APA). These studies point out how stressful work environments have become a growing problem that siphons off more than $500 billion a year from America's economy, creating a loss of nearly 550 million workdays annually due to health issues. These conditions can occur when requirements of a job assignment do not match the abilities or resources of the worker or where there exists a loss of participative opportunities in the work environment. (Whetten and Cameron 2002, Page 104; National Institute for Occupational Safety and Health (NIOSH) Report on Stress at Work, 1999).

In order to effectively research how democracy in the workplace and at home impacts stress and productivity, I developed a communicative and educative mechanism that delves into the daily lives of the participants to identify how more democratic work environments enable participants to become more aware of their social and legal rights in the workplace and at home. This mechanism allowed individuals to learn how to create less stressful, and more democratic and liberating work and home environments. The goals of developing the mechanism was to allow participants (1) to identify and recognize strategies for living more liberating lives by understanding workplace rights and (2) to more effectively and democratically manage work and home environments. I envision this research will empower participants by using democratic principles of freedom, liberty and

justice, freeing them from the stress of uncertainty and increasing the security they feel in their work and home environments.

In order to effectively implement the mechanism required for my research, I utilized a research methodology known as a virtual ethnography. This methodology utilizes the internet to allow participants to gain access to an interactive communicative learning system where they can interact with questionnaires, workplace and home scenarios, review best practices and legal rights research related to employment law and family law. This methodology tracked participants' progress as they learn how to improve their work and home environments and the system is improved based on the input they provide through various levels of questions analyzed by the system. This input assists in learning how to best discover the meanings participants associate with various issues related to democracy in the workplace and at home.

There are several advantages to this type of research methodology. Participants can access the system day or night at their convenience to provide their input. The system can be accessed from any computer system, so participants can interact with the system from libraries, internet cafes, or from the convenience of their home or work environments. The system allows participants to go into whatever depth of description and participation they feel comfortable. They can revisit and interact with the system at any time and review previous questions and answers that are tracked by the system to assess the participants' learning process. The methodology lends itself to more in-depth longitudinal studies so that participant's answers and knowledge accumulation can be

monitored and analyzed over extended periods of time to better understand the participant's intent and meaning behind their responses. The methodology also enables changes to be made to the system as more is learned about the processes and laws that effect democracy in the workplace and at home from both the participants' input and through further research.

It is my hope that this research and the virtual ethnographic methodology will provide on-going support for long-term policy and program analysis and decisions that are dynamic and longitudinal, allowing participants the opportunity to learn and provide feedback about policies and programs in order to improve their effectiveness. I believe this research mechanism provides a cost effective and a timely approach to performing dynamic in-depth longitudinal research that requires a comprehensive understanding of underlying issues that incorporate the views, meanings and inter-relationships generated by the research participants, enabling them to learn how to create more democratic, healthier, and happier work and home environments.

Chapter 1

THEORETICAL FOUNDATIONS OF DEMOCRACY

"If liberty and equality, as is thought by some, are chiefly to be
found in democracy, they will be best attained when all persons
alike share in government to the utmost." Aristotle

In this chapter, I provide a brief foundational discussion on democracy and

social contract as a fundamental component of democracy from a philosophical

and historic-theoretical perspective. We begin by looking at the origins of

democracy from the 5th-4th century BC in the Greek meaning of democracy;

δημοκρατία – (dēmokratía) meaning "rule of the people", which was coined from

δῆμος (dêmos) "people" and κράτος (Kratos) "power". Over the centuries,

democracy has come to mean many things to different people but the hope is to

identify how the founding principles of freedom, liberty, justice, and equality

came into existence through social contract research.

Democracy has seen many interpretations that generally follow eras of

social struggle and disputes that occur at various levels of societal agreements and

understandings, often defined as social contracts. These social contracts have

continued to affect individual freedoms as they occur in the daily activities of

those governed. These agreements between the participants (the governed) within

these social contracts are rarely taken to a level of analysis that examines the

impact that they have on the participant's daily work and home lives. The basic

theories of governance of human activity are generally contrasted in philosophic

generalizations of national and international politics and rarely address the

realities that individuals face in their daily lives.

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Philosophical Review of Democracy

A discussion of early philosophies of governance might best start with a review of Plato's Forms of Government. Plato's ideal State, though not always attainable, evaluates each form of government by their worth including 1) *timocracy* where there is one ruler whom the people honor, 2) *oligarchy* where rule is subject to a few wealthy people whose main interest is chiefly material goods, 3) *democracy* where the governance is based on the masses, usually the lower classes who promote freedom and equality, and where classes are abolished, and the final form being 4) *tyranny*, considered the most perverse form of government where one supreme ruler commands all others for the sake of unjust and selfish interest (Sahakian 1968, Page 61).

In Aristotle's discussions of the six forms of governance, he identifies the more effective forms of government as 1) *monarchy*, 2) *aristocracy*, and 3) *polity;* and the most defective forms of governance as 4) *tyranny*, 5) *oligarchy*, and 6) *democracy.* Aristotle favored a monarchical form of government where leadership was not based on a divine right of kings but on the nature and education of the best qualified person. However, Aristotle felt that any form of government should be based on a primary consideration for the public and not on private interests as a good (Sahakian 1968, Page 77).

Aristotle exemplified how good forms of government are corrupted. A *monarchy* rule in the interest of the good of the State degenerates into a tyrannical form of government when the monarch's interests turn towards selfish ends, deteriorating into a despot. The *aristocracy* rule (the most capable through

natural endowment and education and always limited to a few people belonging to the intellectual elite) degenerates into a corrupt form of the *oligarchy*, when the rule of a few is no longer in the interest of the citizens but of their own financial advancement. The *polity* is "where a sovereignty rests with the corporate citizenry who govern themselves under laws protected by a constitution" which can degrade into a *democracy*. In this case, the great masses that rule are not educated to the detrimental consequences of self-interests over the common good; and thus, focus on their personal gain (Sahakian 1968, Page 77). This degradation is reflected in the situation we are currently experiencing with the collapse of the mortgage, credit and banking systems because of a lack of educative processes to help people become aware of the impacts of unregulated self-interest and greed on the common good.

In comparing Plato and Aristotle's evaluations of different forms of government, both identify a form having a single ruler who has only the *best interest of the people* at heart and is most qualified. Both appear to identify an ideal form of aristocracy. Aristotle however points out that this form of government can also become the most tyrannical form of government. Plato and Aristotle also differ on the oligarchy form of government. Plato indicated that this form of government was of greater worth, while Aristotle felt it was a degenerative and corrupt form of an aristocracy. Oligarchies tend to be tyrannical by nature because they are reliant on public servitude. Modern democracies may be thought of as elected oligarchies where the masses are ruled by the elected few. While recognizing that democracy can be a degenerative form of polity or one

that is based on rule by the masses, both Plato and Aristotle identified it as one of the most empowering forms of government when the masses are educated.

In Aristotle's evaluation of the degradation of the polity form of government, an important insight is made in respect to the realities of human nature. Even our best of intensions are plagued by socially constructed self-interest. We are by nature survivalists who seek self-interested personal gain as a point of survival. Both Plato and Aristotle alluded to the importance of educating the populace as the key to protecting democratic freedoms. In Plato's republic, a democracy required each person equal opportunities; whereas, Aristotle required each child a proper education in virtue to become responsible citizens concerned for the common good instead of egotistic self-interest. (Sahakian 1968, Pages 60, 77, and 78).

Historic-Theoretical Review of Democracy

Building on the philosophical foundation of democratic forms of governance defined by Plato and Aristotle, let us take a brief journey through the history of democratic theories and concepts based on social contracts between people and their governing institutions. This journey will look at some of the major theorists who have contributed to the foundational concepts of social democracy as it relates to freedom, liberty, justice and equality through social contracts. We will start this journey by reviewing the social contracts of equality as defined by Thomas Hobbes and then move to the more contemporary concerns of social justice through communicative legal actions within democratic societies as defined in the works of Jurgen Habermas.

In "The Leviathan", Thomas Hobbes (1588-1679) discusses social contracts in relation to the justice people receive within a society. Hobbes considers the nature of equality among people in relation to a person's knowledge and skills, as well as the circumstances that affect the happiness and abilities of individuals within society. Hence, a democracy is based on self-governance of one's knowledge and skills. Hobbes considers commutative and distributive justice important in constructing social contracts that are inclusive and representative of the needs and desires of all members of society. A democracy based on these concepts requires a more direct democracy between all individuals who are bound in the maintenance of justice and equality through social contracts (Solomon1990, pp. 80-92).

In his work "The Second Treatise on Government," John Locke (1632-1704) considers the rights and duties of citizens and individuals within a society as "natural laws" and views the primary purpose of the social contract as unifying individuals into a community of equality. Locke further indicates that equality is founded on obligations and duties owed to one another in deriving maxims of justice and charity. In Lock's law of nature to govern, reason teaches mankind that no one should harm another with respect to life, health, liberty or possessions. Locke places importance on the consent of the whole versus the majority (or ruling class), which requires that every individual be included to obtain the consent of the whole, moving toward a consensus of sorts. Locke defines the concepts of a constitution in a political society as requiring representation of all members of the community within a social contract. Locke's requirement raises

questions concerning the degree to which a representative and exclusionary form of society and governance is effective if some individuals are not represented by interest groups or a ruling class (Solomon 1990, pp. 93-100). Based on Locke's concerns about representative governance, can a form of government based on politically elite representation truly be representative of all the people and can democratic principles of equality and justice be maintained in a representative form of government where the many are governed by the few?

In the following statement, Locke points out the issue of majority consent over the consent of the whole (Solomon 1990, pp. 99):

> *"For if the consent of the majority shall not in reason be received as the act of the whole and conclude every individual, nothing but the consent of every individual can make anything to be the act of the whole; but such a consent is next to impossible ever to be had if we consider the infirmities of health and avocations of business which in a number, though much less than that of a commonwealth, will necessarily keep many away from the public assembly."*

Jean-Jacques Rousseau (1712-1778) expands on some of the issues of equality and social contract in his work "The Discourse on the Origins of Inequality and The Social Contract". Rousseau speaks of the social contract as moving beyond a vehicle for controlling each other or protecting ourselves, and towards a means of protecting our prosperity through laws. Social contracts within national and state constitutions have become important vehicles for social control and regulation in today's society but more importantly provide a foundation for maintaining a just and democratic society. Rousseau points out the important differences between the aggregation of social contracts versus subduing

the masses through a ruling class and its effect on society (a social industry). He indicates the tendency of tyranny occurring under the 'states of rule' of the few over the many (such as one employer over many employees).

Rousseau's consideration for social contracts places people and all their power "in common under the supreme direction of the general will; and as one we receive each member as an indivisible part of the whole" (a democracy for all the people) (Solomon 1990, p. 113). Rousseau defines the whole as an association that "produces a moral and collective body composed of as many members as there are voices in the assembly, which receives from this same act its unity, its common self, its life and its will" (Solomon 1990, pp. 113-114). This concern for representation in our communities, work and home environments, and the effect of decisions and policies on the whole of society remains with us today. This is particularly a challenging concern when only a few (self-interested) representatives (such as managers) are involved in decision-making for the many (employees) (Solomon 1990, pp. 101-116).

In his work "The Contractual Basis for a Just Society," Immanuel Kant (1724-1804) points out that "among all the contracts by which a large group of men unite to form a society … the contract establishing a civil constitution … is of exceptional nature." For Kant, all social contracts contain "a union of many individual for some common end which they all share" and where the ends that 'all ought to share' become the absolute primary duty in all human relationships.

Kant positions these conditions of social contract on the following a priori

principles (Sterba, 1999, pp. 104-109):

1. The freedom of every member of society as a human being

2. The equality of each with all the others as a subject

3. The independence of each member of a commonwealth as a citizen

Kant goes on to define "man's freedom as a human being" as a principle

for the constitution of a commonwealth as expressed in the following formula:

> *"No one can compel me to be happy in accordance with his*
> *conception of the welfare of others, for each may seek his*
> *happiness in whatever way he sees fit, so long as he does not*
> *infringe upon the freedom of others to pursue a similar end which*
> *can be reconciled with the freedom of everyone else within a*
> *workable general law" (Sterba, 1999, p. 104)*

Kant expands on this formula by indicating that "the public welfare which

demands first consideration lies precisely in that legal constitution which

guarantees everyone his freedom within the law, so that each remains free to seek

his happiness in whatever way he thinks best, so long as he does not violate the

lawful freedom and rights of his fellow subjects" (Sterba, 1999, p.108).

In "A Theory of Justice", John Rawls (1921-2002) discusses social

arrangements surrounding social contracts and their effect on individual

representation and protection within society. Rawls recognizes the significance of

people understanding and agreeing with underlying principles of democratic

justice within a society. These principles need to be incorporated into the nature

of individual social interactions in daily life. Rawls makes the point that people

tend to acquire a sense of justice through these social interactions. Therefore, there is a need to learn moral principles and to "develop a desire to act in accordance with its principles" in daily social interactions (Solomon 1990, pp. 305-312). Rawls defines how social interaction, and more specifically the development of principles of social contracts, can be used to provide more equitable and just agreements between a society and its members. In an equitable and just society, each member is not only responsible for self-governance of their actions but must consider the impact of their actions on other members of society, especially those less fortunate. These principles must be taught and reinforced from an early age and throughout our lives (Solomon 1990, pp. 305-312).

One of Rawls' most prominent concepts is that of the "original position," where people are placed into a situation defined by certain constraints. In consideration of these constraints, the principles of adjusting ones claims is necessary in appropriately assigning rights and duties to maintain justice and equality. Rawls indicates that these principles must first be general in nature and "capable of serving as a public charter of a well-ordered society in perpetuity…and the knowledge of them must be open to individuals in any generation" (Solomon 1990, pp. 305-312).

Michael Walzer provides important considerations of distributive struggles in his work "Spheres of Justice". Walzer considers human struggles for supremacy and corrupted ideologies embedded in generalized principles of distribution. Walzer suggests limiting political power by widely distributing power so that power exists in a direct and more pure democracy of self-

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governance. He warns that the distribution of power is not easily obtained "given the well-canvassed dangers of majority tyranny" and that the monopolies in society make the possibility of democratic government difficult. Walzer indicates that "in theory, political power is the dominant good in a democracy" as long as it is "convertible in any way the citizens choose" (Solomon 1990, p. 343). The problem occurs when monopolies of political power neutralize the power of the citizens (which often occurs in work environments run by autocratic managers). Walzer then indicates that democracy, as Marx recognized, "is essentially a reflective system, mirroring the prevailing and emerging distribution of social goods" (Solomon 1990, pp. 340-347)

In addressing Walzer's concerns over monopolistic structures and moving to a reflective system that mirrors the needs of the individuals within society, a power shift giving individuals greater power in the social institutions is necessary to contribute to and maintain a just society. Major contributors and often powerful political institutions within society include businesses as work organizations as well as families and community support structures. These major contributors provide extremely important environments for educating and communicating support for the equal distribution of power required in the creation of a fair and just society and in establishing a deeper sense of democracy and human equality.

To wrap up our historic journey through the theories of democracy as social governance and contract, I shall finish by turning the focus of our journey's end to the legal aspects of social inclusion and equal treatment through

communicative mechanism as discussed in Habermas' article, "The Rule of Law and Democracy" (1999). In his discussion of the relationship between the rule of law and democracy as essential to any constitutional state, Habermas indicates "modern law is legitimated by the autonomy guaranteed equally to each citizen" (Habermas, 1999, p. 181). Law is often viewed as the mechanism to control social actions and to ensure equal and fair treatment of all parties in the social activities in which they partake (social activities such as work and home activities where the majority of our lives are spent) (Habermas 1999, pp. 181-182).

Habermas discusses law in relation to Kantian expressions of 'legality' where "legal norms must be viewed simultaneously in two different ways, as coercive laws and as laws of freedom." (Habermas 1999, p. 182) Legal norms within democratic procedure are a "legitimating force to the law-making process in the context of social and ideological pluralism." (Habermas 1999, p. 184). Democratic procedure "ultimately rests on an elaborate communicative arrangement" (Habermas 1999, p. 184) that requires a 'legally' institutionalized form of communication to ensure the rights of communication and participation, safeguarding the political autonomy of all members of society in their social interactions. This is especially true in work and home environments where people not only spend the greatest amount of time but have the greatest opportunities for social interaction and learning to become more productive in society and enable them to pursue happiness.

Communicative autonomy and participation requires inclusive work environments that ensure each individual is given the opportunity to participate

fully in the decision-making processes. In order to accomplish this, workers need to be fully informed of the political and legal implications of their duties and rights within the distribution of power. This requires access to extensive educative processes related to legal communicative structures that exist within society. Gaining communicative autonomy and participation through educative mechanisms is engrained within the works of John Dewey and Jurgen Habermas as discussed in Judith Green's book, "Deep Democracy" (Green, 1999). In this book, Judith Green (1999) points out that both Dewey and Habermas affirm the importance of 'formally' democratic governmental institutions founded on a broader distribution of education that more generally shares a sense of human equality within all aspects of society (such as work and home environments).

Through this historic journey of democratic theories, moving from the concepts of self-governance of social interactions as discussed in the writings of Thomas Hobbes to the requirements for a legal form of communicative autonomy in a democracy discussed by Jurgen Habermas, there is a clear sense of the importance of social contracts as a foundation for a deeper democracy where individual rights are protected within the daily activities of social life. Democracy must become a way of life at every level of social interaction, including work and home life in order to ensure a society that is just, liberating, free, and equal for everyone whether they are at home or at work or interacting with all the various social institutions.

Chapter 2

HUMAN RIGHTS AND DEMOCRACY IN THE WORKPLACE AND AT
HOME

"Man's capacity for justice makes democracy possible; but man's
inclination to injustice makes democracy necessary."
Reinhold Niebuhr

To protect life, liberty, and property within work and home environments,

we need to understand how legal principles have changed and the way these

changes have impacted worker rights and human rights in general.   To expound

on a legal historic condition that truly paints a disturbing picture, let us consider

Porto's (1998) discussion of the common law traditions and torts. In "The Craft of

Legal Reasoning," Porto discusses wrongful-death cases in nineteenth-century

American workplaces and begins by describing the dangerous workplace

conditions that caused numerous injuries and deaths. Between 1812 and 1860,

steamboats, railroads, and water-powered mills revolutionized the American

economy, but at a high price in human suffering and death (Porto 1998, p.106).

Porto (1998) discusses how workplaces became increasingly dangerous as

machines gradually replaced skilled artisans in the production of goods. As a

result, tort suits became a common feature of the court dockets in the United

States. By and large, injury victims did not fare well because of the Puritan ethic

of free choice and minimal governmental assistance. Employees were left with

the burden of the cost even when injury or death was caused by workplace

conditions or employer negligence.

Porto identified four tort principles that were helpful to industry and harmful to employees and their families were: 1) contributory negligence, 2) assumption of the risk, 3) the fellow-servant rule, and 4) the prohibition on wrongful-death suits (Porto 1998, p. 106). Prohibition on wrongful-death suits were based on the ancient rule of English common law which stipulated that individuals carry any personal injury claims they had during their lifetime to the grave. The deceased person's family members cannot file suit to recover damages from the person(s) whose negligence caused the death. Ironically, in the case of employer negligence involving an employee that survived, payment of damage might be awarded but not if the employee died. Consequently, it was more profitable for the employers if employees died than if they merely suffered injuries (Porto 1998, Page 107). The law created a condition in the workplace where non-serious accidents could become fatal in order to protect the employer rather than protecting the employees' right to life.

According to Porto, American tort law favored defendants, especially employers, for most of the nineteenth century. However, after 1890, social conditions became more conducive to change and victims, often speaking through labor unions, became increasingly adamant in demanding changes in tort law. They had ample reason to make such demands as industrial accidents increased after 1890 at a rate that the earlier generations of judges who crafted the tort law did not foresee. The railroad injury rate alone doubled between 1889 and 1906. By 1900, industrial accidents were claiming approximately thirty-five thousand lives and inflicting nearly two million injuries, annually (Porto 1998, p. 107).

Slowly, courts began to respond to victims' pleas and began to relax rigid rules that had dominated tort law for two generations. As the conditions for protection of life and property became less bearable by the victims, mechanisms became available to give a voice to employees and build a more democratic environment. The changes in negligence tort law reflected a growing awareness that economic and technological changes had radically altered the relationship between businesses and their consumers, as well as employers and their employees in America (Porto 1998, Page 107 & 108).

An aspect that Porto does not discuss is the impact of the absence of employee protections for life, liberty and property in work environments as well as in home environments. We often do not look beyond the employee's conditions within work environments to the impact these conditions have on their home environments and families. If an employee is injured or worse, losses their life at work, the family and home environments suffer, which in-turn impacts other lives in the community, society and ultimately the public good. When an employee losses their ability to generate income as property of their labor, they are unable to support their families and community and family members must seek general public support. When these circumstances are created by an employer or manager's lack of concern, or worse their negligence, they affect not only the employees' rights to life, liberty, and property (a right protected under the 14th Amendment) but they also adversely affect the community. Thus, employers who do not providing a safe and democratic work environment that protects the rights of their employees can create a burden on society.

Liberty as a Condition of Democracy in Workplace Rights

Liberty is a condition of democracy that allows employees to work in an organization and live in a home where they have free will over their actions and are in control their own destiny. In other words, they are free agents with personal freedom from servitude, confinement, oppression, tyranny and immunity from the arbitrary exercise of authority. Liberty in the workplace gives employees access to social rights that allow them to be healthy self-governing productive citizens where they are able to pursue happiness in their daily lives, whether at work or at home.

Let us start by looking at work environments that are considered undemocratic, where employees do not have a voice in what happens to them thereby constraining and oppressing their liberty. According to the National Institute for Occupational Safety (NIOSH), the research arm of OSHA, these conditions can create what is referred to as stressful work environments (NIOSH, 1999). Whetten and Cameron (2002) argue that stress in the workplace has become a growing health problem that siphons off more than $500 billion annually from the nation's economy where nearly 550 million workdays are lost each year due to stress (Whetten and Cameron 2002, p. 104). This kind of economic and personal impact on an employees' health demonstrates the importance of building more democratic work and home environments where people have greater liberty and control over their lives.

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According to a 25-year study of employee surveys, the largest cause of workplace stress is incompetent management. Three out of four surveys listed employee relationships with immediate supervisors as the worst aspect of the job. These problems stem from employees who feel they are not involved in the decision-making processes which is a major part of creating a democratic work environment (Whetten and Cameron 2002, Page 105) and also violates one of the three key concerns in the NIOSH-OSHA report on Workplace Stress, lack of worker involvement in decision-making, the other two being unrealistic deadlines and low levels of support for supervisors (NIOSH, 1999).

Whetten and Cameron identify that major elements of stress are generated based on the dynamics of a "force field" that exists within work environments (a concept introduced by Kurt Lewin in his book on "Field theory in social science" (1951)). These fields are filled with reinforcing and opposing (oppressive) forces (i.e. stressors) that act to stimulate or inhibit the performance desired by the individual. When these forces become imbalanced (out of the control of the employee), stress is produced that affects the individual's behavior and health (Whetten and Cameron 2002, Page 105). Therefore, as individuals gain more liberties in their work environments, there is greater control of the balance of these forces and less tension. Whetten and Cameron note that scientific literature on stress focuses mostly on consequences but not enough on coping with stress or prevention (Whetten and Cameron 2002, Page 105). This is a key area of my research focus: creating work environments that are less stressful and more democratic, productive, and healthy.

These concepts also apply to stress in home environments. Family members are faced with forces that create imbalances in their lives that oppress liberties. Having liberty is central to enabling family members to participate in decisions that affect their lives. Dryzek (2000) discusses the issues and dynamics of liberalism as it relates to the protection of freedom against oppressive democratic majorities. Dryzek specifically points out that John Stuart Mill anticipated uneasy relationships between liberalism and deliberative democracy and sought to promote a more expanded and informed public debate. (Dryzek 2000, Page 9). In home environments there are opportunities for oppressive majorities or authoritarian rule where individuals within the home lose their liberties creating greater stress in the home.

In Dryzek's reference to "the people" not meaning "all people", I would argue that deliberative democracies must be inclusive of all members and not exclude anyone, not even children. Exclusionary practices in a democracy (especially deliberative democracies) can lead to tyranny by the exclusive/ruling members of society where a democracy in the true sense no longer exists. These ideals are supported in Soder, Goodlad and McMannon's work where they call for the introduction of inclusive aspects of democracy in the early years of the educative process (Soder, Goodlad, and McMannon 2001). Soder, Goodlad and McMannon maintain that democracy embraces the entire compass of human beings living and working together in desirable ways. There is a convergence of divine rational thought related to human traits that are considered virtuous in social working relationships where the wholeness embraces a duality of

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autonomous and rational behavior within social environments (Soder, Goodlad, and McMannon 2001, Pages 10 & 11).

In educating for democratic character there is a need for a supportive habitat that infuses all of our ubiquitous educating media with a mission of deliberative attention to the development of democratic character in the young (Soder, Goodlad, and McMannon 2001, pages 14 & 15). This point is a key consideration in my research where developing more liberating work and home environments through ubiquitous educative systems are based on technological methodologies to be discussed in chapter 3. These educative efforts to support liberty at work and home must start with the very young and be reinforced throughout their lives to ensure that the lessons of democracy are continuously practiced and incorporated into their daily lives.

In evaluating what liberties are often affected within work environments, I will review some legal history as it relates to employment laws and the affect these laws have on employees. One of the most prominent legal concerns that have affected the democratic rights of employee's involves employment-at-will (EAW) versus due process and associated whistleblower statutes. Werhane, Radin and Bowie (2004) analyze the impact of employment-at-will doctrine on work environments. They point out that the origins of the doctrine did not come from legal or constitutional foundations, rather, the doctrine's origins are found in a treatise by H. G. Wood entitled, Master and Servant. The term "master-servant" was the medieval reference for employer-employee relationships and these terms still persist in some areas of law today. According to Wood, the original intent

was to provide equal freedoms to both parties but American courts began applying the principle to streamline legal processes "even though its basis was a treatise not … rooted in legal jurisprudence" (Werhane, Radin, and Bowie 2004, page 56). What was not realized through the adoption of the At-Will treatise, was the unequal power that exists between employers and employees that often leads to an oppressive abuse of the doctrine, shifting the burden from the employer onto the employee (Werhane, Radin, and Bowie 2004, page 57).

Employment-at-will has been determined to be ineffective in supporting the legal ramifications of firing employees in situations that not only adversely affected the employee but also the employer. Over its history, the employment-at-will was found to be not only contractually invalid but to be unconstitutional because it violated due process rights guaranteed by the 14th Amendment of the United States Constitution (Werhane, Radin and Bowie, 2004).

Some issues that occur in employment-at-will environments, derived from tort theory, include employees that reported company or employer involvement in illegal or unethical activities who were fired. In *Bowman v. State Bank of Keysville*, 229 Va. 534 (1985), the Virginia court refused to condone retaliatory discharges based on employees who did not vote as the Bank had wanted them to in a merger. This provided an exception to the employment-at-will doctrine. Whistleblowing statutes emerged during the 1970s and 1980s in both judicial and statutory regulations as exceptions to employment-at-will. An example is Pierce v. Ortho Pharmaceutical Corporation, 845 N.J. 58, 417 A.2d 505 (1980) where the courts reinstated a physician fired from a company for refusing to seek approval

to test a certain drug on human subjects that the court held lied in the interest of public welfare. The court argued that employees could not to be fired for refusing to jeopardize public safety (Werhane, Radin, and Bowie 2004, page 67). Another example of public safety concerns related to employment is protecting hospital employees who refuse to cover up errors to protect the hospital from liability.

An important document concerning Whistleblowing is the recent Congressional Research Service report, Order Code RL33215, published on December 30th, 2005 by Louis Fisher, Senior Specialist in Separation of Powers – Government and Finance Division. The report states that Congress needs to depend on information obtained from the other branches of government to discharge their duties. This includes communications from department heads and directly from employees within the agencies. In the next section I will expand on the importance of the employee communicative rights (whistleblowing) as they relate to organizational democracy.

Organizational Democracy

In this section we will explore some of the literature and application of democratic principles within organizational work environments. Some of the key concerns identified relate to the conditions of organizational and institutional environments. Jane Henry (1991) refers to work environments as a "psychic prison" capturing the issue of domination within work organizations and institutions, a concept that extends from such scholars as Karl Marx, Marcuse, Habermas and Weber (Henry, 1991). A similar concern appears in Weber's reference to organizational bureaucracy as an "iron cage". From a critical theory perspective, work life constitutes an alienated mode of life that shapes, controls, and generally makes individuals subservient (slaves) to the artificially contrived and reified control of modern organizations over individuals (Henry, 1991) left to the whim of oppressive management (masters).

As society moves further into a knowledge economy, there are important considerations to be made with respect to moving beyond a general empowerment of individuals and begin building a company of citizens within social organizations (Manville and Ober 2003). This requires an intense concern for employee rights. The democratization of organizations protects employee rights and ensures that employees are productive by providing more liberating work environments that effectively utilize human social capital to serve society and humanity in an equitable and just fashion. This also ensures that employees stay healthy and employed which also provides a positive effect on the public good in general as well as employers.

Workers often feel estranged, disenfranchised, distrustful and cynical about organizational environments unless there are adequate models and templates for "truly democratic systems of management—one suited to the knowledge worker's need for and expectation of self-determination and self-government" (Manville and Ober 2003a: page 48). Manville and Ober (2003a, pp. 48-49) suggest that "history offers a compelling, if unexpected, prototype" of a model that 2,500 years ago provided an environment in the "city-state of ancient Athens" that "rose to unprecedented political and economic power by giving its citizens a *direct* voice and active role in civic governance" as an aspired form of government. Manville and Ober (2003a) also suggest that an underlying architecture of citizenship involving participatory structures, communal values, and practices of engagement can be important in building a company of citizens. Within these companies of citizens "people with expertise" are able to come forward as "their skills" are required to support the organization and community "without becoming a part of any standing bureaucracy" (Manville and Ober 2003, pp. 50-51).

In his review of organizational democracy from "the history of an idea", Malcolm Warner (1984) made a similar suggestion in a comparison of classical versus modern concepts of organizational democracy. Athenian ideals were characterized as direct democracy but were not a "pure" direct democracy. He cautions that drawing parallels between earlier forms of participation and modern organizational involvement may be misleading (Warner 1984, p. 8). There are often confusions about what participatory democracy involves and at what level

individuals should be involved in decision making. If individuals are affected by the decisions being made, they should have direct involvement in the decisions.

While Warner acknowledged that there are lessons to be learned from the past, these lessons need to be kept in perspective to current human sociological constraints and technologies that plague contemporary societies. Warner clarifies this point by quoting Giovanni Sartori's *Democratic Theory* (1965) (Warner 1984, p. 8):

> The term democracy was coined almost twenty-five hundred years ago. It first appeared in Herodotus' *History* in connection with the notion of *isonomia*, equality before the law. From then on, even though it was eclipsed for a very long interval, it has remained part of the political vocabulary. But in so long a lifetime it has naturally acquired diverse meanings, referring, as it has, to very different historical situations as well as to very different ideals. So with the passing of time both its denotative and connotative uses have changed. It would be strange if this were not so; and it is therefore surprising to observe how little attention is paid to the fact that today's concept of democracy has only a very slight resemblance, if any, to the concept that was revered in the fifth century B.C. When we use the same word we instinctively tend to believe that we are referring to the same thing. However, if this ingenuousness is excusable when we are dealing with contemporary events, it is not when it makes us pass over more than two thousand years of historical achievements, as is the case with Rousseau and with Marx's and Lenin's democratic primitivism.

Warner's quote from Sartori points to important considerations of modern political and organizational democracy, particularly in discerning the intellectual ideological roots of present practices and aspirations including democratic, socialistic, human growth and development as well as productivity and efficiency notions. Warner (1984) places these concepts in four main categories that address the origins of organizational democracy: (1) Classical-versus-modern concepts, (2) Socialist theory, (3) "Elite-versus-mass" notion, and (4) Theories-versus-

experiments (Warner 1984, p. 6). These categories clarify where working conditions can be improved to create democratic organizations that respect individual rights.

Donald Nightingale (1982: p. x) identifies the differences in principle between democratic society and modern work organizations as the underlying reason for the widely held beliefs "that something is wrong at the workplace … [and] that authoritarian practices at the workplace are no longer necessary or appropriate." These differences are pointed out in the following table (Nightingale 1982, p. x):

Table 1

Principles of Democratic Society vs. Modern Work Organizations

The principles of democratic society	The principles of modern work organization
Accountability of leadership to the governed	Accountability of leadership to higher authority (owners, superiors in the hierarchy of authority)
Citizen participation or consultation in decisions: right to be informed	Decision-making made at highest levels of the hierarchy
Leaders chosen by the governed	Leaders chosen by higher authority
Right to question leaders	Leaders' judgments and decisions not subject to review by subordinates
Right to dissent, free speech	Uniformity, compliance with directives demanded
Freedom of movement, association, liberty, individual expression	Activities, interactions closely defined and circumscribed
Informed and knowledgeable constituency	Information limited to immediate task requirements

Nightingale (1982, p. x) points out that a "significant component of the mounting problems in the workplace is the contradiction between the values celebrated in the larger democratic society and the values underpinning the workplace." In the modern work organization, the employee's freedom is suspended in many important respects, justice is limited, obedience to superiors is demanded, and the workplace is permeated with the symbols of authority, deference, and subordination (a managerial form of workplace governance established under servitude/slavery, master-slave constructs) (Nightingale 1982, p. x).

The worker experiences a vague and imperfectly articulated sense that a contradiction exists between the social and moral values of individual expression, freedom, and initiative (as protected under the national social contract established within the U. S. Constitution) and the values of obedience and subordination (established in the management of slaves) in the workplace (Nightingale 1982, p. x). Transitioning from managerial bureaucratic practices (originally established in the management of slaves as slavery), to democratic practices in the workplace, leads to some important insights for an emerging theory of self-management.

The emerging theory of self-management exists within three discoveries made in a democratic organization: (1) people become their environment (similar to the concepts set for by Plato in his Allegory of the Cave (Stumpf, 1975)), (2) whatever is perceived, thought, invented, or exists can be altered, and (3) whenever we alter our perceptions, thoughts, or inventions, we automatically reinvent ourselves (Cloke and Goldsmith 2002, p. 31). In other words, when we

perceive and think of ourselves as capable of self-management, we begin to transform the organizations. We reinvent ourselves more capable and competent than we were before (Cloke and Goldsmith 2002, pp. 31-32). Thus, through a profound sense of our own power and an acute awareness of our ability to change our own thoughts, we are able to become more effective and productive human beings in organizations, the community and at home. As we learn how to be more democratic in our workplace and at home we become more democratic and effective as citizens within the whole of society and thus become more productive members of society.

In order to ensure that self-management flourishes and enables people to move from managerial bureaucracies to organizational democracies, the words of such leading management thinkers as W. Edwards Deming, Peter Drucker and Warren Bennis must be heeded. They caution against hierarchical, bureaucratic, top-down management in favor of participative, democratic leadership. This is clearly stated by Deming in the following quote (Cloke and Goldsmith 2002, p. 34):

> Our prevailing system of management has destroyed our people. People are born with intrinsic motivation, self-esteem, dignity, curiosity to learn, and joy in learning. The forces of destruction begin with toddlers—a prize for the best Halloween costume, grades in school, gold stars, and on up through the university. On the job, people, teams, divisions are ranked [categorized and discriminated against]—reward for the one at the top, punishment at the bottom. MBO [management by objectives], quotas, incentive pay, business plans, put together separately, division by division, cause further loss, unknown and unknowable.

Because the influences of society begin at an early age, in order to circumvent destructive behavior in the workplace and societal organizations, we must begin instilling the concepts of a democracy in our children from a very young age. We must teach and model the way. We must act democratically in our everyday lives, at work, at school and most importantly at home.

Democracy in the Home

In Deming's closing analysis in the previous section, it becomes clear that democracy is not only effectual to organizational work environments and political/social institutions, but is extremely important to the effectual maintenance of democratic ideals within home environments where individuals find their ultimate refuge from the oppressive social forces of everyday society. The home becomes the point of reinforcement of democratic ideals of freedom, liberty, and justice through our personal awareness of self-management/governance.

In her book, "Deep Democracy: Community, Diversity, and Transformation," Judith Green (1999) delves into what Dewey considered an important force in reshaping relationships between differing levels of social organizations in a "humanly sustaining level of community." These forces are referred to as "consciously interconnected patterns of daily face-to-face relationships that give us a sense of social identity and shared purpose." Many of these social relationships occur at home between family members and friends where we tend to find common understandings of purpose. Green feels that

Dewey's active "community of interest and endeavor" creates an on-going problem solving process, spanning generations. Dewey argues that one learns to be human and a "distinctive" member of society through educative communication that can bring new members into a community of particular traditions and flows of life (Green, 1999, Page 17).

Green indicates that Dewey was prophetic in emphasizing the importance of reconstructing various kinds of communities of daily life, not only local neighborhoods but also justice-focused church communities, democratic workplaces, and cooperative networks of people united by a shared, lived concern. This engenders the importance of the inculcation of democratic values within home environments to ensure these values are carried into every aspect of human social interaction within society.

The reconstructive ideals of Dewey can guide us in appropriating and answering five crucial questions: (1) how can we shape educational experiences as key tools and aspects of the ongoing growth of individuals, cultures, and societies; (2) how can we build up transformative cross-difference coalitions and diverse self-educating communities amidst the differences that presently divide us; (3) how can we develop effective processes of intelligent, cross-difference democratic communication within social inquiry, choice, and action; (4) how can we reflectively revise our goals, objectives, and strategies as we learn from our transformative efforts; and (5) how can we effectively coordinate and sustain our transformative efforts over the extended time it will take to institutionalize the kinds of progressive changes that will make democratic community real in our

experience (Green 1999, p. 55). A more effective way to maintain and sustain educative and communicative learning processes is to provide dynamic and continuous learning systems that allow us to interact with various levels of research on a daily basis using advanced technologies, as will be discussed in chapter 3, enabling us to become more knowledgeable about how to make more democratic home and work environments.

Dewey's insights into the connections between the ideals of deep democracy and the need for a supportive and sustaining community life leads to what Dewey suggests must be a reconstruction of "communities of daily experience" (Green 1999, pp. 60-61). These experiences must be formed out of the community life we live in today and be developed and sustained through global connections that link our lives through reconstructive ideals of democratic meaning (Green 1999, pp. 61). These reconstructive efforts establish the basis for Greens' underlying themes for building a "humane diversity" that is established within public 'infrastructures' and maintained through self-governance in all aspects of home and family life. These infrastructures are best supported through dialectic mechanisms that provide extensive opportunities for finding and sharing common (and uncommon) views and values in every aspect of our daily lives through free and open democratic processes.

Ian Shapiro (1999) also suggests that we consider all aspects of the lived environment when considering the application of democratic justice in the governance of "human interactions relating to childhood, domestic life, work, old age, and dying" (Shapiro 1999, p.5). Shapiro suggests that democratic justice is a

"semicontextual ideal" that is applied differently in various domains of human activity based on other belief systems. Shapiro goes further to suggest the importance of involving children in participating in democratic processes in their daily home lives (Shapiro 1999, p. 69). Shapiro indicates that children need to be nurtured and educated to become competent adults in evolving systems of institutions where "society has an obligation to develop in children the salable skills and capacities – human capital –" required for prevailing in economic and technological circumstances (Shapiro 1999, p. 87).

An example of the impact of allowing children to participate and develop skills in democratic processes is demonstrated in the efforts of Simon Jackson (founder of the Spirit Bear Youth Coalition) who at age 13 was able to utilize democratic processes of opposition using various techniques and technologies to save the Spirit Bear in the Great Bear Rainforest along the coast of British Columbia in Canada (http://www.spiritbearyouth.org).

To move people toward organizations and communities based on democracy, Craig Calhoun (1995) suggests that we consider a 'project of democracy' where the actions of civic projects mobilize "to serve the interests of their citizens" and provide opportunities for drawing 'ordinary' people into a "discourse of legitimacy." Calhoun indicates that "politics must involve struggle over salient identities, as is manifest in the spread of the ideology of citizenship." The identity of 'citizen' is in tension with others, from 'worker,' 'woman,' or 'priest'" because each culminate from our work and home environments as inclusive versus exclusive memberships (Calhoun, 1995, Page 231).

Chapter 3 will delve into a foundational design of the diverse educative processes described by Dewey in a reconstructive transformation for a more effective democracy required to support and promote the development and fulfillment of human social rights and freedoms utilizing advanced technological mechanisms. These mechanisms can enable participants to become more aware of the interconnections of our society and how their identity can be circumscribed with others who share and influence our lives in democratic ways.

The following chapter will discuss the design of dynamic and diverse educative and communicative processes using advanced virtual ethnographic research system architecture that enables people to more effectively learn about democracy, citizenship, productivity, and human purpose. Most importantly, participants can utilize educative processes to teach them about rights and duties as members of society and how rights are applied in their daily lives. Education should be inclusive, immersive and available to everyone at all times and educative processes must be continuous and inviting so that people of all ages and interests are always mindful and aware of the world around them and how they can participate and affect the world in positive and democratic ways. I will also discuss advanced technologies that can be used to communicate a better understanding of our world through greater involvement from participants in research that helps them observe and communicate the realities they face in their daily lives while contributing to and accessing the vast accumulations of knowledge that can help build a more democratic and just society.

Chapter 3
DESIGNING DYNAMIC EDUCATIVE AND COMMUNICATIVE SYSTEMS

FOR DEMOCRACY

"While democracy must have its organizations and controls, its
vital breath is individual liberty." Charles Evans Hughes

As we continue to see society move more quickly into the information age

through advances in technology, and as society continues to rely more heavily on

these advances in technology, it is important to design technologies that help

society to become more knowledgeable about being humane and democratic.

Technological advances provide opportunities to gain access to information and

stored knowledge about our governmental processes and our rights and duties in

building a more democratic society. The importance of having access to this

information is best illustrated by comments from a past president of the United

States and a Framer of the United States constitution in the following statement:

> *The general philosophy governing information in a democratic*
> *society is generally traced to then ex-President James Madison*
> *who in an 1822 letter to a friend wrote: "A popular government,*
> *without popular information or the means of acquiring it, is but a*
> *Prologue to a Farce or a Tragedy; or perhaps both. Knowledge*
> *will forever govern ignorance; and a people who mean to be their*
> *own Governors, must arm themselves with the power which*
> *knowledge gives."* (Branscomb, 1994, Jurimetrics, pg. 417)

In applying these concepts to the design of current technologies, we must

develop new mechanisms and systems that give us full access to legitimate

information and knowledge sources. These mechanisms must be available to

everyone at all times and in all places.

Citizens, employees and family members need to be able to evaluate various sources of information or stored knowledge using their own methods of validation and learning though dynamic technological learning and communicative systems. William Eggers (2005) describes a type of access to information or stored knowledge where people are able to openly talk about their government without walls and are able to organize web sites around terms that are familiar to regular citizens such as their "life events." He also discusses the need for choice-based systems that allow participants to have greater freedom in what they choose through the provision of ranges of options, ultimately giving them more freedom and control over their lives (Eggers 2005, Pages 17–21).

When Eggers refers to "My government, My way", he is referring to empowering individuals with a sense of choice and the ability to regulate the effectiveness of the services of governance, and of the use of "mass customization" technology to personalize intelligent digital guides based on individual needs. These same approaches that are used in customer relationship management (CRM) systems that have become a key technology in the Information Technology (IT) industry and continues to grow more prominent in the building of business and governmental systems (Eggers 2005, Page 22 & 23). These technologies require designing interfaces that are deeply sensitive to the underlying preferences and needs of the individual users. This requires that these information systems are able to create layers of accumulated knowledge that can be examined with diverse intentions as defined by the dynamic nature of those who use these systems to engage their personal interests and needs.

Electronic Democracy and the Digital City

In a review of electronic democracy and the civic networking movement in context, there has been a long history with a central feature of the technological Utopias proposed by scholars, politicians, and activists since the 1960s. There were more than 200 civic networking projects at the time of publication (1998) using networked computers to provide local political information and participation in decision-making (Tsagarousianou, Tambini, and Bryan 1998, Page 1). These projects often embrace computer-mediated/monitored communications (CMC) and provide civic networks. Electronic democracy provides a key methodology for the use of technological advances to support the development of communicative mechanisms enabling citizens, employees, and families to interact with other members of society to improve their well-being.

The increased efforts to govern by network creates a sense of the digital revolution where the Internet has reduced the cost of information to a fraction of what it once cost and where email and other communication technologies have made communicating and collaborating with partners across organizational boundaries infinitely better, faster, and more cost effective (Goldsmith and Eggers 2004, Page 17). Where formal memos were once the standard form of communication, emails have become second nature communication medium within work and home environments. People can now, in a matter of minutes, send documents, pictures, videos, or even presentations to co-workers, cohorts in other agencies, friends, neighbors, or even acquaintances across the world, building a global electronic communicative and educative network of democracy.

Technologies such as email and the Internet provide designs that are inexpensive while enabling greater freedoms in social processes by allowing employees and families to communicate more freely. These same technologies can be designed to build electronic democracies that support governmental processes through a means referred to as the digital city.

An example of electronic democracy that Tsagarousianou, Tambini and Byran (1998) discuss in their book, *Cyberdemocracy: Technology, Cities, and Civic Networks*, provides some good guidelines for designing technologies to support an electronic democracy. They discuss a number of the objectives used in designing an electronic democracy based on Amsterdam's Digital City project which are described as follows:

- to initiate and stimulate public debate between citizens and between citizens and local government in electronic discussion groups;
- to create a platform for distributing (local) government information as well as administrative and public information;
- to assist and support citizens and social organizations in order for them to offer their information electronically and to participate in telematics projects;
- to stimulate debate about citizen's rights and their obligations on the Electronic Highway and to look after the interests of consumers;
- to advise on the development of community information services;
- to provide opportunities for and connections between new projects and information providers, nationally and internationally;
- to develop instruments (such as graphical interfaces, help-desks and user manuals) enabling users access to all kinds of information services;
- to maintain and expand contacts with international community networks.

The Digital City of Amsterdam has been so successful that it has required an increased infrastructure to support the democratic activities it provides on the Internet (Tsagarousianou, Tambini, and Bryan 1998, Page 23).

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Virtual Ethnographic Research Methodology

Moving from digital democratic cities to ethnographic studies requires a deeper understanding of digital virtual worlds where virtual ethnographic research methodologies can be used to perform more effective research. Most of the research related to "virtual ethnographic research methodology" refers back to Christine Hine's book titled "Virtual Ethnography" (2000).

One concern about this technology is the ability to gain access to the technology. In Miller and Slater's book, "The Internet: An Ethnographic Approach" (2000), presents the methodology used to perform an ethnography of the on-line environment in Trinidad and demonstrates the way that this approach provides a great deal of insight into understanding their social, political, and economic environments. They even found that interviewing individuals who live in squatter corrugated iron-and-plank built huts with no running water were well-informed about email and were even paying for computer courses.

David Hakken takes a different look at how ethnographic research on the Web is performed in his book "Cyborgs@cyberspace: An Ethnographer Looks to the Future" (1999). He discusses the Internet as a new medium for social interaction and social change that provides methods for performing ethnographic research in cyberspace. This new medium becomes an important component to the future of research and democratic systems.

One of the more informative books reviewed for this research on performing ethnographic research over the Web is Mann & Stewart's book, "Internet Communications and Qualitative Research: A Handbook for

Researching Online" (2000). This book provides a great deal of detail on specific methods and processes to perform qualitative research on the Internet along with an in-depth background on this new approach to conducting research in general.

Virtual Ethnography and Internet research entail the use of the dynamic communication techniques of the Web to enable participants to be continually connected with the researcher through various media such as chat rooms, Web page input/response mechanisms, one-on-one visual communication and electronic mail. Some of the other mechanisms and communications on the Internet include general Internet access, Usenet newsgroups, bulletin boards, Internet Relay Chat (IRC), Multi-User Domains (MUDs), as well as other specialized application communication mechanisms that continue to push the boundaries of communicative spheres (Mann & Stewart 2000, Hine 2000).

There is also a redefining of urban space through the role of electronic communications that allow people to view real-time traffic, weather, and governmental processes over the Internet. One of the key issues is the level of trust that can occur over the Internet. This trust changes based on the type of interfaces utilized including e-commerce (electronic commercial transactions over the Internet) where millions of people now entrust their financial processes to electronic communication mechanisms including a growing industry of purchasing various goods and services over the Internet.

The manifestation of electronic materials on the Internet continues to impact the spatial, temporal, and economic distribution of information worldwide. There exists a social inertia within these distributions that will redefine how we

do research in the future and more specifically how we will become immersed within ethnographic cultures that define themselves and distribute their information via electronic communications on a daily basis.

As we continue into a postmodern era built upon modern aspects of advanced technologies that have now fragmented cultural aspects of society from modernity's attempts to rationalize and control social life, we now have the opportunity to experience a new communicative nature of post-modernity. This leaves us with a postmodern world where identities and boundaries are blurred between humans and machines as well as reality and virtuality. As the Internet forces social transformations, there are various foreshadowing issues that must be addressed. Some of the specific theoretical research questions that should be considered in virtual ethnographic methodological studies include (Hine 2000, pp. 8 & 118):

- How do the users of the Internet understand its capacities, the significance of its use, and the capacities of the Internet with relation to whom they perceive to be their audiences?
- How does the Internet affect the organization of social relationships in time and space with relation to 'real life' organization and how do users reconcile the differences?
- What are the implications of the Internet for authenticity and authority? How are identities performed, experienced, and judged across virtual environments?
- Are 'the virtual' experiences radically different from and separate from 'the real' experience within boundaries of life online versus offline?

Given these foreshadowing questions, a key place for the study of cultural objects within the Internet is where the Internet represents a place often referred to as cyberspace. The Internet becomes a place where a separate and dynamic

culture is formed and reformed through computer-mediated communication (CMC) social environments. Cyberspace cultures experience both anonymity and diverse cultural identities. As participants, Internet web site designers are often immersed within the dynamic cultures of the Internet as they build explorative messages within their own forms of social action/interaction. Identifying both space and time within their social relations, many Web environments provide temporal and situational relevancy in spatial orderings that cross between online and offline boundaries within the Internet (Hakken 1999, Hine 2000). It is important that these designs are contiguous with the users' sense of reality and how these realities can be most effectively used in the management and support of democratic social environments at work and at home.

In the shaping of ethnographic methodologies utilizing the Internet, reflexive construction introduces opportunities for both face-to-face (via Internet visual communications) and autonomous participation. This also come into play when virtual ethnographic research utilizes the continuous dynamic nature of the Internet to allow various forms of social action to occur throughout the temporal and spatial relationships developed over the Web. This allows individuals to become more active in democratic processes without having to reveal their social position, granting them greater confidence in social democratic processes to improve their lived environments as well as other aspects of society.

Some key collaborative social spaces that currently exist within the virtual spaces of cyberspace include news groups and social and professional support societies that exist on the Web. These social spaces provide a high level of

freedom for the users of the Internet and allow for a greater diversity in participation since the social interactions are not exclusionary of individuals by social status, gender, race, etc. (Mann & Stewart, 2000; Hine, 2000).

In a comparative ethnography, lines of inquiry link various dimensions of social transformations that offer a limited number of analytical dimensions, four of which are evaluated with respect to the dynamics of such research as discussed by Miller and Slater (2000, p. 10) as follows:

- *Dynamics of objectification*: how do people engage with the Internet as an instance of material culture through which they are caught up in process of identification?
- *Dynamics of mediating*: how do people engage with new media as media: how do people come to understand, frame and make use of features, potentialities, dangers and metaphors that they perceive in these new media?
- *Dynamics of normative freedom*: how do people engage with the dialectics of freedom and its normative forms as they are opened up by Internet media?
- *Dynamics of positioning*: how do people engage with the ways in which Internet media position them within networks that transcend their immediate location, and that comprise the mingled flows of cultural, political, financial and economic resources?

These dynamics of Internet communications lead to an interconnectedness and flow of information that gives new power and autonomy to individuals that can be understood within the disciplines of their institutions (Miller and Slater, 2000). Within these dynamics, there is a need to "demythologize" virtual culture

in order to assess the serious implications it has for our personal and collective lives. The lack of recipes (which exist extensively within the dynamic nature of virtual Web environments) is what strengthens ethnography as a lived craft and allows it to thrive as a reflexive methodology (Hine, 2000).

The "reduced social cues" model, which is greatly influenced by technology-based approaches to research, is one of the best approaches in understanding computer-monitored/mediated communications (CMC) utilizing virtual conferencing techniques. The lack of social cues within these environments explains both equality of participation and individuals speaking outright and gaining a voice without concern for their social status, gender, education, disabilities, or other marginalizing and silencing social cues.

CMCs provide a rich and complex social experience while "enhancing democratic participation" within virtual communities where a web of personal relationships is sustained within cyberspace, uninhibited by socially constructed boundaries to equality. Within the culturally rich virtual landscape of the Internet, there also exists both qualitative and quantitative analysis tools such as virtual field notes, message pools and thematic mappings of social structures within various virtual environments. Though virtually diverse, there still exists an opportunity for improving the democratic aspects of these environments.

Some of these environments include Usenet, virtual newsgroups and virtual societies that allow shared knowledge language as a collective good and effectively support in depth research where participants are free to interact at their convenience and reflect on their current or changing beliefs or social concerns.

The freedom of research participants within virtual ethnographic research environments allows them to provide input whenever they are able or inspired to do so and to reflect through sustained interaction via the Internet providing a greater opportunity for more in-depth and validated research over larger spans of time. As participants realize and become more communicative about their lived environments through online sustained interaction, there are opportunities for researchers to delve deeper into the cultural issues and languages of the participants to better define and understand the issues.

Virtual ethnographic research environments can build upon desired versus socially constructed identities forced upon participants in their offline worlds. These virtually constructed identities may or may not map to the participant's offline life and can create a false view of the participant's culturally subjective environments. Though it is important to always be aware of this, it is also important to look at how participants represent themselves as an opportunity to better understand their desires and needs as individuals outside of who they may be in their socially constructed realities. Various techniques can be used to help participants communicate the realities they face in the offline world while allowing them to share their lives as they see fit through virtual ethnographic research systems.

The interfaces between online and offline worlds creates a socio-technical agency, or what Hakkan (1999) refers to as a "technology actor network" (TAN) that ensues transformative implications in how humans and organizations interact. Hakkan provides an interesting contrast as well between various forms of

Postmodernism and the "holistic causality" within open social systems where social processes systematically accompany one another with high degrees of multivariate correlations. This produces a continuum of new world-views and socio-spatial relationships and arrangements where empirical data can be successfully mapped providing a more revolutionary approach to ethnocentric research than just another application of technology (Hakken, 1999).

Virtual ethnographic research environments allow research participants to play a more active versus passive role in the research as they interact with the virtual research interfaces that enable participants to build a deeper understanding of the research through online interactions. It also allows research participants to engage in a more reflexive understanding of how they interact not only with the research itself but with other participants whom they can choose to engage with based on the level of comfort they feel at any particular point in time. This enables the researcher to build a cellular automata based social interaction model from participant interactions with the research. Through these models, virtual ethnographic technologies can be utilized to build a deeper understanding of the outcomes of social interactions and how to more effectively support democratic social environments in both the workplace and at home based on the dynamically changing needs of the individuals.

These virtual social interactions simulate democratic processes of autonomy where individuals participate at their own comfort levels and are allowed time to access, research and develop an understanding of the subject matter under consideration. This is also important in research participation where

respondents are given the opportunity to spend the amount of time and effort they feel they need to go to a level of understanding about the research questions in order to accurately respond. The Virtual Ethnographic setting is then constructed within the private spaces of the research participant's home, allowing creative adaptation to the ethos of fidelity for the process of meaningful construction *in situ*, with full consideration for a holistic analysis of the ethnography (Hine, 2000). This leads to new powers of autonomy and freedoms that are afforded individuals through the interconnectedness and information flows within the landscape of "network societies" that exist in the Internet (Miller and Slater, 2000).

Virtual Ethnography allows us to reach beyond the bounded social temporal locations of specific site research and expand methodological foundations to create dynamic sustained social interactions that simulate immersion of social qualities of human communicative spheres to better model the dynamic nature of these social interactions. Such interactions also enable ethnographic researchers to more effectively capture, analyze, and validate information as it occurs within the automated computer-monitored communication (CMC) environment of the Internet. This enables researchers to perform prolonged, longitudinal studies at reduced expense and effort. It also allows greater validation with anonymous input from additional sources that experience the same lived environments from different perspectives, ensuring the key informants are capturing the information in enough detail to support the depth

of research required to gain an ethnographic understanding of the culture and environments being studied.

Another important implication in prolonged, longitudinal studies, using dynamic virtual ethnography is the ability to follow individuals or families as they move from one environment and location to another without losing them from the study. Since Virtual Ethnography allows the researcher to maintain sustained contact with research participants any time of day, anywhere in the world, the researcher is able to perform longitudinal studies without losing a large percentage of participants over extended periods of time within the global mobile society we live in today. This can also allow comparative studies between environments to find out how these differing environments support or hinder democratic principles and conditions such that they can be used to improve human social environments through shared communicative experiences.

Through sustained interaction utilizing Virtual Ethnographic techniques, researchers are also able to branch out quickly within the web of social interaction and expand their research to other informants or validate individual experiences with little effort or expense by including these others through online email and Internet Web database interfaces. This allows the research to capture greater clarifications of individual experiences and relationships within the lived environments and build more precise perspectives and dimensions and depth to the research. This also allows the researcher to more quickly and effectively switch between participants in order to focus on those who are contributing greater depth of interaction in support of the research or are more able to clarify

non-democratic issues such as injustices or oppressive tyrannical social environments.

Since Virtual Ethnography does not allow the researcher to gain the full effects of the research participants lived environment and only allows the researcher to see the world through the participants' descriptions, it is important that the researcher also visit some of the key sites involved in the research to both verify and clarify the research information. Through the initial Virtual interaction, the researcher is able to gather important information about the differences between the various lived environments that are being studied and can use participant gathered pictures and videos to also build a better understanding of these environments. Based on an evaluation of the various responses and descriptions of the research participant's lived experiences, the researcher can more effectively and efficiently follow up with site visits based on the immersive long-term multifaceted engagements participants have communicated related to their social settings and be more prepared for the site visit (Miller and Slater, 2000).

In longitudinal studies, the efficiencies of Virtual Ethnographic research techniques are even more important as research participants move from one environment to another. This allows the researcher to gain a deeper understanding of the various participants' involvement in their lived environments and also helps the researcher to better understand how differing environments effect the participant's perceptions of their lives and their interaction with the differing environments. Again, depending on research funding and the type of

interaction that might be most effective for the research, site visits may help to build a better understanding of why the research participant perceives certain conditions differently within their varied social environments.

The prolonged interaction via the Internet and continuous feedback from participants can actually prevent superficial interpretations and perceptions from researchers who tend to be "casual observers" who show up time to time within the study environment(s) (Hine, 2000).

Prolonged dynamic research interactions across the Web can take many forms. These forms of interaction are generally determined by the type and depth of ethnographic research that is being proposed. If face-to-face interaction is required then video capture in real-time between the researcher and participant may need to be established. At some levels, such interactions can involve video records of both the Internet interactions and offline follow up where both the researcher and participant capture video records of the lived environments and share those over the Internet during discussion sessions. Mann & Stewart (2000) discuss how online versus face-to-face interviewing can offer an online venue that can address concerns related to personal issues and subjects that make it awkward for participants while CMC interviews allow participants to stay on their home ground minimizing self-consciousness and self-constraint, leading to more direct communication and greater self-disclosure (Mann & Stewart, 2000).

There may also be group discussions that occur over the Internet either in Chat Room type environments or through special video conferencing interfaces between each of the participants involved in the research discussion. This allows

for automatic recording of the interactions of the participants while allowing for anonymous input from those members of the discussion group who are uncomfortable with providing direct input into the discussion (this can increase information and participation by all the individuals within the discussion group based on Group Decision Support System concepts that can mediate these discussions anonymously).

Besides enabling researchers to more effectively perform longitudinal studies within a mobile society, Dynamic Virtual Ethnography enables researchers to expand on their research to define a more representative sample group from which they can effective identify and document a web of networked social interactions that occur throughout their research efforts. This can be accomplished several ways on the Internet as participants identify other informants who might be good sources of information specific to a cultural or social aspect of the research. These informants can exist either in a state of seclusion, accessible only via Internet or email, or in other parts of the world that would make traditional face-to-face interviewing cost prohibitive.

The implications of utilizing a research methodology or technique that more closely models the dynamic nature of social interaction provides the opportunity for research to become more accurate and effective in capturing the underlying essence of the dynamic cultural and social aspects of the people and environment being studied. It also allows the research to become more applicable to actual social policy and program improvements within democratic societies.

Dynamic Virtual Ethnographic research provides a powerful tool for researchers by providing opportunities for continuous, on-going feedback from research participants, automating many of the tedious tasks involved in capturing, classifying, analyzing and publishing/distributing the ethnographic data. It also allows researchers to perform in-depth longitudinal studies across the globe without leaving their homes, while easily expanding the cultural social network being studied to include areas that may have been impossible to include due to budget/funding constraints while following participants as they move to new locations.

Virtual Ethnographic environments also minimizes the impact of social cues of biasing within paradigmatic views of the researcher who is immersed in a culture and trying to tag cultural artifacts with their world views; and thus, allow the participant to more freely describe and verify the cultural understandings of language and meaning outside of the intruding conditions of face-to-face interviews. It also allows the researcher the flexibility and efficiency of performing preliminary analysis of the ethnographic data before expending a great deal of energy in further face-to-face interviews while maintaining a breath of research that is sometimes difficult to obtain in immersed research environments. Thus, dynamic virtual ethnographic research methodologies can become an important tool in the Ethnographers Toolkit as electronic/virtual communication networks continue to become a way of life for an increasing number of people in both their work and home environments where in 2009 over 68 percent of United

States homes were online with the Internet (U.S. Census Special Report on Computer and Internet Use in the United States, 2009).

With more than 68 percent of US households online in 2009, there exists an immense social web of interaction occurring daily that is nearly void of socially oppressive cues such as status, race, gender, and place, while enabling its participants to voice their concerns and collaborate during all hours of the day. What better place to perform in-depth longitudinal studies than in an environment that continuously and dynamically captures the daily interaction of social and cultural communicative spheres through automated technologies and methodologies like a Virtual Ethnographic Research system to support a virtualized democracy.

Technological Advancements in Democracy Research

Technological advances can enable us to more effectively and efficiently access and share knowledge and information, from revolutionizing movements of electronic democracy to the creation of the digital cities, government transparency, and a dynamic educative and communicative social network that allows participants to more effectively learn about their rights and duties as citizens of this planet. The use of the Internet to perform advanced virtual ethnographic research enables research designs that ensure human factors are accurately supported within the advanced technologies and methodologies developed by society.

After over thirty years of being involved in various technological implementations, some of the technological advances that appear to more promising in supporting a more democratic, healthy and productive society include the following:

1. Artificial Intelligence
2. Cellular Automata
3. Crowdsourcing
4. Data Warehousing, Business Intelligence and Data Mining technology
5. E-Democracy
6. Expert Systems
7. Geospatial Technologies
8. Neural Networks
9. SWARM
10. Virtual Reality

It is important to note that this is not an all-inclusive list but just some key technologies that I have been exposed to during my career and research efforts. In the remainder of this chapter, I will provide a brief discussion on how each of these technological advances can be utilized to improve democratic research as well as other research methods to enable researchers to more effectively and efficiently implement and manage their research projects and effect democracy within various lived social environments such as work and home.

Artificial Intelligence

Artificial Intelligence involves both technology and methodological disciplines that integrate various technologies and techniques into a variety of intellectual solutions that can be applied in various ways to everyday life activities such as cooking food, driving to work, searching for information, communicating

and interacting with various public and private services to resolve issues or gain insight on how to best affect current or future events.

According to John McCarthy (2007) of the Computer Science Department at Stanford University, Artificial Intelligence "is the science and engineering of making intelligent machines, especially intelligent computer programs. It is related to the similar task of using computers to understand human intelligence, but AI does not have to confine itself to methods that are biologically observable." (McCarthy, 2007, Page 2). Democratic research requires participants to learn in dynamic and varied ways how democracy can best be integrated into their everyday lives based on their input from various circumstances that they experience in their lives.

Artificial Intelligence technologies can utilize advance agent-based probability and predictive models through continuous iterative sampling of comparative data analysis techniques based on current and past feedback systems. These techniques can be utilized to allow individuals to better understand, interact, and govern their daily activities creating a more effective democracy of the people as they are empowered through the technology.

Cellular Automata

Cellular Automata involves a technology that enables modeling of self-reproducing and self-healing systems where inter-relationships of physical entities (cellular spaces) can be tracked and quantified in time and space based in defined sets of rules. Though cellular automata has existed in different forms through time, the concept of cellular automaton was advanced by mathematician John von

Neumann in the 1940's who in is conception of cellular automata "constitutes also the first applicable model of massively parallel computation" where "Von Neumann was thinking of imitating the behavior of a human brain in order to build a machine able to solve very complex problems" (Chopard and Droz, 1998, Page 1). John von Neumann was also involved in designing the first digital computers, a design that became known as the Von Neumann Architecture and paved the way for the general purpose computers used today.

Cellular automata related technologies can be used to help individuals better understand how various actions taken within time and space can affect long-term situations based on rules that we set in place as a society so that they can make better decisions related to policy and program design and development within both public and private organizations, ensuring a more effective democracy through better modeling and understanding about our world as it relates to long-term reproduction of social conditions based on social rules. An important underlying construct of cellular automata is the establishment of relationships and rules that allow the automation of the cellular interactions in such a way that allows the rules and relationships to be dynamically adjusted to create better and more effective decisions similar to the way Artificial Intelligence processes continually adjust to input from their environment.

Crowdsourcing

Crowdsourcing, in a sense, is giving a voice to the many, empowering the people to provide input, anonymously in some cases, into a process similar to how a democracy by definition empowers people to self-govern their own lives in light

of social policies and institutions. In his book "The Wisdom of Crowds: Why the Many are Smarter Than the Few and How Collective Wisdom Shapes Business, Economies, Societies, and Nations," James Surowiecki (2004) discusses how under controlled, rule-driven, incentivized conditions, crowds can be an important source of defining the common good that according to Galton, "The result seems more creditable to the trustworthiness of a democratic judgment that might have been expected" (Surowiecki 2004, Page xiii). A democracy is then, in a sense, a crowdsourcing process that requires that all members of a society, organization, group, family be allowed to have input on the decisions and processes that affect them. Aristotle warned of the dangers of a democratic government when there are uneducated self-interested masses, which can have a detrimental effect on the common good. Both Plato and Aristotle identified democracy as one of the most empowering forms of government when the masses are educated.

Crowdsourcing through gaming system interfaces have provided a powerful tool for research where "in a matter of 10 days, gamers were able to do what biochemists have been trying to do for a decade: decipher the structure of a protein called retroviral protease, an enzyme that is key to the way HIV multiplies. Being able to see how this protein builds will likely help scientists develop drugs to halt that growth" (Moore, 2011, p. 1).

Data Warehousing

Data Warehousing, Business Intelligence and Data mining technologies enable the integration of various diverse data sources into an intelligent data structure that allow users of the technologies to more effectively analyze and

delve into the detailed information to support better decision making.   One well-made decision based on this technology "can translate to millions of dollars in many organizations" (Joy Mundy, Warren Thornthwaite, with Ralph Kimball, 2011, Page xxix). More importantly, well-structured data in a Data Warehouse enables better decision making that can save lives by having vital information available in an intelligent manner, allowing individuals to better understand how the decisions we make impacts the lives of others as well as themselves. Data Warehousing allows the governed to govern themselves through deeper access to data about their organizations and government, creating a more democratic society where the people are given the power that knowledge provides.

Business Intelligence by definition is the extraction of intelligent information from a Data Warehouse based on structuring the data through an Extract-Transform-Load (ETL) process to access accumulated knowledge available through integration of various data sources so that it can be processed through intelligent data mining and analysis applications utilizing On Line Analytical Processing (OLAP). This intelligent data presentation, often through Web or Dashboard environments, enables the people using the applications to better understand the analytical aspects of the data without having to spend a great deal of time sifting through the various data sources (See Figure 1 below).
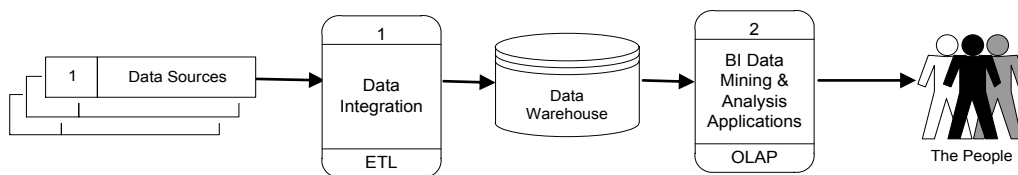
Figure 1: Data Integration into Data Warehouse for BI Application

Data Mining

Data Mining is the activity performed while using a Data Warehouse & Business Intelligence system to query down through the summarized analytical data to determine the underlying supporting data providing a better understand how the data was summarized and to verify the validate the supporting data. According to the Congressional Reporting Service Report to Congress on Data Mining (Seifert 2004. CRS-1), "Data mining involves the use of sophisticated data analysis tools to discover previously unknown, valid patterns and relationships in large data sets." Seifert (2004) also indicates that even though data mining can be used as a powerful analysis tool, oversight by skilled technical and analytical specialists is still required to effectively interpret the output from the data mining application. This is why, according to Aristotle, we need an educated populace in order to ensure an effective oversight of our democracy.

As data mining technology can provide a deeper understanding of data relationships and the predictive effects of decisions within a democracy, there is a need to ensure that everyone is sufficiently educated in the underlying issues of the social and political data within various social institutions to more effectively govern and improve the lives of individuals within these environments. The technology has also become an important part of our daily lives as we mine the internet for answers to various questions. Data mining provides an important research technology to enable more democratic social institutions where information is made available to improve on the decisions that affect our lives.

E-Democracy

E-Democracy (eDemocracy) involves many different technologies and processes from eVoting to eParticipation eGovernment and eGovernance. Rik Panaganiban (2004) developed a document for the Center for United Nations Reform Education called "E-democracy and the United Nations: Using Information Communications Technologies to Increase Access to Information and Participation within the UN System." In this document, Rik begins by describing the importance of the "Information Society" as it relates to "all aspects of our lives" in the following introductory statement where he quotes George A. Papandreou (Panaganiban, 2004, Page 1):

> *The Information Society affects all aspects of our lives, in particular how individuals become more informed and engaged in political processes… an increase in citizen participation in elections and public discourse through information and communication technologies will contribute to a better and healthier democracy. The Internet, mobile communications, and other forms of direct democracy need to be reinforced with the involvement of civil society, the media, and political organizations at all levels – from local communities to national governments and international networks. There is a clear need for more open, multi-level deliberation, leading to the creation of a new global public space that will allow a system of progressive global governance to function effectively.* [2]
> – George A. Papandreou, Minister for Foreign Affairs of Greece, World Summit on the Information Society, Geneva, 10 December 2003
> [2] ITU Website, http://www.itu.int/wsis/geneva/coverage/statements/greece/gr.html

Panaganiban (2004) looks at how Information and Communications Technology (ICT) can "help close the 'democracy gap' between everyday citizens and the United Nations" (Panaganiban 2004, Page 2), introduces "e-democracy" as an analytical framework, defining it as "the use of information and communication technologies and strategies by democratic actors… within

political and governance processes of local communities, nations and on the

international stage" (Panaganiban 2004, Page3).

Panaganiban expands on the definition of e-democracy by referencing a

Queensland Government paper which indicates the following (Panaganiban 2004,

Page 5):

> *The characteristics of the Internet which support e-democracy*
> *include: timeliness - the opportunity to participate in debates as*
> *they happen; accessibility - participation is less limited by*
> *geography, disability or networks; and facilitation - individuals*
> *and groups can access information and provide input which*
> *previously has often been restricted to organizations which had the*
> *resources to respond to government.*
>   - E-Democracy Policy Framework (Queensland Government, 2001)

"From the perspective of each government, civil society, or business

organization, it is relatively easy to explore our institutional role in building

participatory democracy online. Taking the whole situation into account is the

difficult challenge. We are not building in a vacuum, nor are we developing our

efforts in a constant environment. In the end, the only people who are

experiencing the totality of the emerging democratic information-age are citizens

or e-citizens" (Clift, 2004, Page 2). Though Clift's focus is e-government, the

insight of requiring organizations to play a role in building a participatory

democracy where citizens participate in an evolving society.

E-democracy, though often referenced within a governmental context,

becomes an important tool to enable individuals to participate in the decision-

making that can affect their lives, and ensuring they have access to the knowledge

and information to more effectively protect their rights in lived environments such

as workplaces and in their homes.

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Expert Systems

Expert Systems, often categorized under Artificial Intelligence, provide an important technological advancement for the support of human understanding and interaction in the support of more democratic societies. By bringing together all the experts on a subject matter and allowing dynamic learning within an Expert System so that not only the experts in the subject matter learn from one another but everyone who uses the system learns from the various experts as well as from one another. Expert systems lend themselves greatly to the dynamic nature of applying democratic principles to the ever changing needs of human daily activities that require the freedom and liberty that knowledge gives individuals to be the best citizens and humanitarians they can be and productive members of society.

In his book "Fuzzy Expert Systems and Fuzzy Reasoning," Siler (2005) describes an expert system as computer programs designed to make available some of the skills and knowledge of an expert to non- experts with an ability to deal with data uncertainties, ambiguities, and contradictions (which is why fuzzy logic techniques are required) and develop new rules from combining and processing existing expert rules. Siler points out that human knowledge can be viewed as "declarative (facts we have in stored in memory), and procedural, skills in utilizing declarative knowledge to some purpose." He further discusses that there are different approaches to developing expert systems such as a rule-based approach, the use of semantic or associative nets, frames, as well as neural nets which we discuss in more detail shortly (Siler 2005, Preface and Page 2).

Geospatial Technologies

Geospatial technologies integrate different technologies (e.g. GPS, GIS, 3D Virtual Worlds, etc.) to build a better understanding of the world around us so that we can more effectively introduce democratic principles to our lived environments. Geospatial technologies allow us to model physical, cultural, social, and emotional aspects of the world to better understand how various aspects of democracy can affect our environment and our lives.

To provide a more foundational description of Geospatial technologies, let us go back about 35,000 years ago to the origins of the two major components of a GIS. "On the walls of the caves near Lascaux, France, Cro-Magnon hunters drew pictures of animals they hunted" and associated with these graphic pictures on the walls of the caves, they also identified tally information of related to the migration routes. These two elements; 1) the geographic picture and 2) the descriptive attribute information about the geographic pictures, are the foundation elements of a modern geographic information systems (U.S. Geological Survey, 2007 – GIS Poster).

Geospatial Technologies provide a unique opportunity for people to better understand their lived environments at a very accurate and immersive level. To give a sense of the far reaching power this technology can provide in democracy research, let us start with an introduction to the philosophical foundations of this technology and then move through the theoretical constructs of geospatial technology which, as you will see, is founded on a number of other technologies we have already discussed as well as others discussed further in the chapter.

In a philosophical view of geospatial technology we can start with one of the early philosophers, often regarded to be one of the first philosophers (the "Father of Philosophy"), Thales (Stumpf, 1975). Thales (624-546 B.C.) developed techniques for measuring the height of pyramids by measuring comparative shadows and "invented a device for calculating the distance of ships at sea" (Sahakian, 1968, Page 1). In early philosophers' attempts to understand the world around them, they often turned to geospatial contexts such as Thales did in the development of methods to measure features on the earth's surface such as the height of pyramids and the distance of ships at sea. These constructs of spatial measure are foundational to geospatial technologies that define measurements of features on the surface of the earth.

Pythagoras (580-497 B.C.) was the first to advance the study of mathematics and develop theoretical foundations in pure science and mathematics where such intellectual activity and liberate and purify the soul (a transmigration of the soul) (Sahakian, 1968, Page 20-21). The Pythagorean philosophies, founded on Pythagoras spiritual aspects of mathematics, defined the geometric structure of reality as one that exists in numbers (Sahakian, 1968, Page 21-22). This presents a world as a dimensional reality that can be modeled in mathematical definitions which are a fundamental capability of geospatial technologies that can model the world in three dimensional spaces. These constructs enable us to more effectively visualize how various aspects of our world can interact with other aspects, both real and virtual (designed), allowing us to better understand our world in a more pragmatic way.

Democritus (460-370 B.C.), in his affinity for Pythagorean mathematical philosophy, reflected that geometrical forms (as referenced by Platonic Ideals) are inherent in atomic matter which is foundational to his atomist theories (Sahakian, 1968, Page 19). In the dualistic realities that Democritus asserted, that which we see and that which is, he theorizes that human senses can only give us "bastard" knowledge while reason can give us "legitimate" knowledge (Stumpf, 1975, Page 29). As geospatial technologies allow us to view the world in its more fundamental forms, we are given the opportunity to reason the geometric realities that exist in our lived environments, we are able to gain "legitimate" knowledge about the world we live in to make more informed decisions about how to most affectively interact with our world and others.

Socrates (469-399 B.C.), as it has been told by others, considered that the surest way to attain reliable knowledge was through a method he called *dialectic*. The dialectic is a process of dialogue where we are forced to clarify our ideas and where, through progressive correction of incomplete or inaccurate notions, ones levels of knowledge can affect ones level of truth. It is also important to know that there are no relative levels of truth in justice and goodness where knowledge is a virtue and truth is absolute (Stumpf, 1975, Pages 40-44). Dialectic processes and progressive corrections to information through knowledge accumulation (similar to learning systems in Artificial Intelligence) is extremely important to working democratic processes where geospatial technologies can be used to uncover underlying information as more spatial data is gathered and integrated

into the system in order to paint an ever clearer picture of the world around us and how it affects our lives and our actions affect others.

Plato (427-347 B.C.) was a student of Socrates and felt that all branches of knowledge should enable men to understand how they fit into the scheme of the universe. Plato's Theory of Knowledge is personified by his allegory of the "Cave," his metaphor of the Divided line of knowledge and his doctrine of the Forms (the goodness of things beyond what they appear to be to us in the shadows of the physical world) (Stumpf, 1975, Pages 52-65). Geospatial technologies allow us to move beyond the blurry shadows of things (opinions and illusions about things as individual copies) that make up our world to the eternal patterns (the intellectual constructs of the reason of things beyond their simple measure) of things as they really exist about our world (the philosophical essence of things). This can be thought of in the geosciences sense where objects make up classes that are the essence of the objects. This construct is required to affectively model the relationships of objects within geospatial models.

Aristotle (384-322 B.C.) developed Formal Logic techniques to be used in formulating proper language for science and forms of human thinking. Aristotle developed a philosophy of *metaphysics* (wisdom) which defines the world beyond *physics* (the physical). Aristotle developed the concepts of *categories* which related to forms of existence and thought that helped to bridge a relationship between Form (essence) and Matter (substance) (Sahakian, 1968, Page 63-67). Aristotle's development of formal logic, *metaphysics*, and *categories* provides the foundation for modern systems processing and especially the meta-physical

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aspects of objects that a categorized and analyzed within geospatial technologies, enabling people to gain a greater wisdom about their world.

There are a number of different technological theories (including those reviewed in this section) which are utilized within geospatial technologies. Let us start with how geospatial technology utilizes cellular automata technological theories to model relationships between activities and entities that occur within geographic space and time. Figure 2 is a screen print of a Customer Density Model from GIS software (ESRI Digital Cities Presentation in Phoenix AZ, 1999) showing how cellular automata technology can be used to identify relationships between customer activity events in geographic space creating a geospatial visual representation of these automated cell event relationships. Theoretical concepts behind cellular automata are utilized in a number of areas within the geospatial technologies as objects, relationships and events are spatially mapped and categorized (Aristotle) based on their spatial locations and associations.
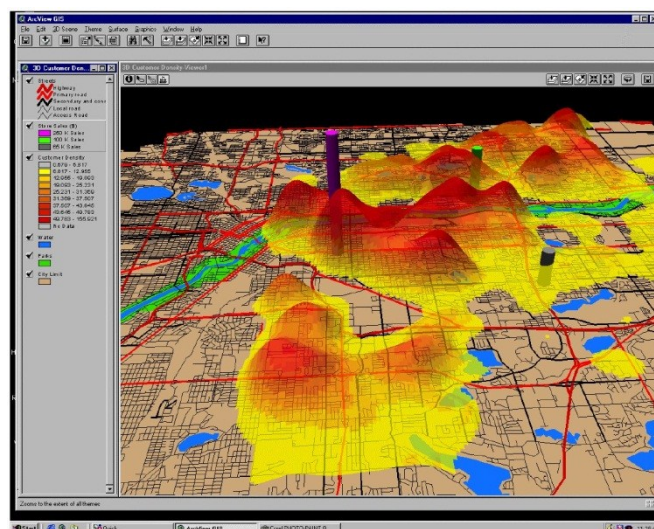
Figure 2: Screen print of GIS Customer Density Model.

Geospatial technologies utilize neural networks by integrating geospatial layers that are not only related by their spatial coincidence but enable spatial object relationships that are processed in a similar fashion to Neural Network Layers where spatial data objects are processed as inputs through other related spatial layers and relationships that yield a spatially oriented output layer founded on intelligently associated network links (e.g. address objects can be linked to electric or water network objects that summarize usage information by spatial locations. The illustrations below in Figure 3 provide a comparison of neural network layers v. geospatial layers (Daniel Klerfors, 1998) and geospatial layers (ESRI Digital Cities Presentation in Phoenix AZ, 1999). Note that in the neural network layers there is an input layer, hidden layers, and an output layer. In the Geospatial layers there are many input layers that are processed in virtual memory (as hidden layers) that are used to produce an output layer that combines the other layers for the final analysis results.
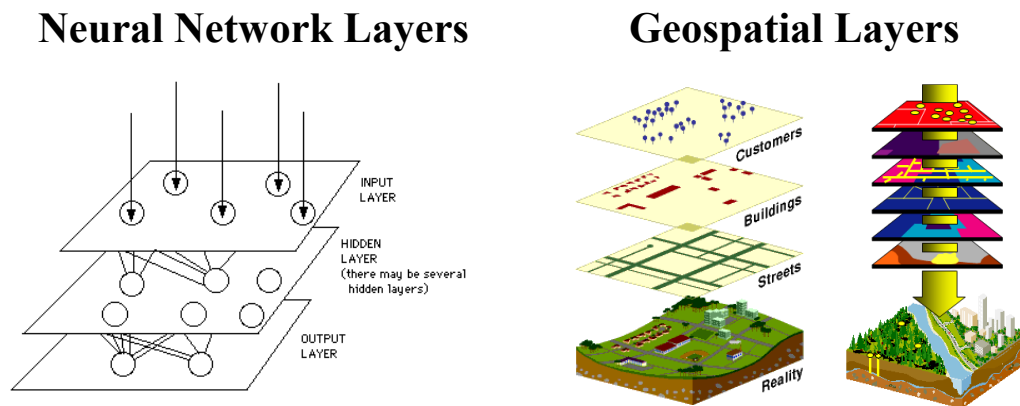
Figure 3: Neural Network Layers v. Geospatial Layers

Geospatial technologies, by definition, utilize Virtual Reality theories in defining the physical world within virtual geospatial systems. Virtual Reality is a widely used term for creating computer generated (virtual) environments or scenes that simulate some aspect of reality. If you think about it, the world we actually see and interpret is in a sense a virtual reality because we as humans reconstruct the world based on our senses and knowledge of the world around us (Democritus "bastard" knowledge) as a virtualized view of reality in our bio-chemical brains (shadows in our brains). Geospatial technologies allow analysis and clarification of the information that is received by our brains related to virtual modeling of the realities to give us clearer information about the world around us (Democritus "legitimate" knowledge). Our realities are therefore virtual reality, constructed in our brains, similar to the shadows in Plato's Allegory of the Cave. Some examples of virtual reality technology in geospatial applications are:
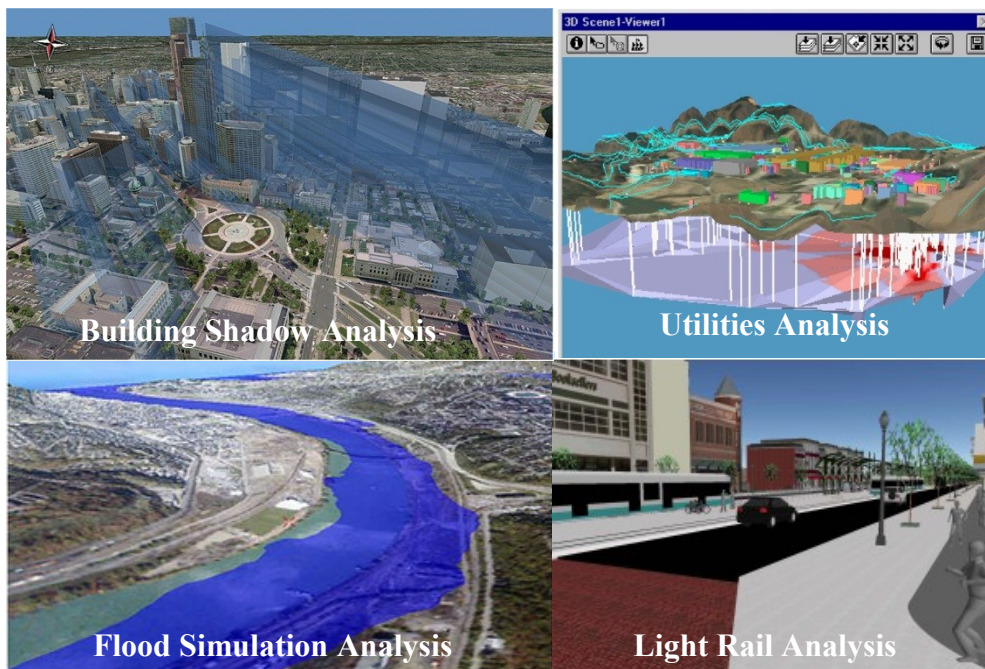
Figure 4: Examples of Virtual Reality in Geospatial Technology

In a review of the philosophical and theoretical foundations of geospatial technologies the importance of this advanced technology becomes quite clear in its application to better understanding the world around us. From cellular automata modeling techniques to virtual reality immersion, geospatial technologies provide a medium for developing better public programs and policies and more importantly, to enable monitoring (Socrates) and measuring (Thales/ Pythagoras) these programs and policies to ensure that they provide for a safe, productive, and effective democracy for all.

Geospatial technologies have also been used to create building interior environments that can simulate the effects of both the external and internal environments on the occupants. These environments can be expanded to include geo-political, geo-social, geo-biological, and geo-cultural aspects that people within these environments experience or may experience based on simulation models. These applications of geospatial technologies have been utilized within the Arizona State University graduate course that I teach where students have used geospatial technologies in such areas as: Anthropology, Bio-Genetic Sciences, Communications, Criminal Justice, Education Leadership, Educational Psychology, Engineering, Environmental Design & Planning, Family & Human Development, Gender Studies, Geography/Geographical Sciences, Global Technology & Development, History & Religious Studies, Justice & Social Inquiry, Political Science, Public Administration, Public Policy, Recreation Management, Sociology, Sustainability, Technology & Innovation, Tourism, Transportation Systems & Management, and Urban Planning to name a few.

Neural Networks

Neural Networks, sometimes referred to as artificial neural networks, involve the modeling of biological neural network structures in electronic processing systems. Virtual neural networks emulate the principles governing the organization of the human brain and the constructs of learning systems through the interaction of computerized mechanisms which can be used to develop more democratic social systems that allow all participants (neurons) to more effectively participate in governing processes in lived environments (Farooq, 2000).

These neural network systems can be used to dynamically capture, process and model complex non-linear data that occur within various social environments providing important information in the support of more democratic work and home environments. In order to model the vast amounts of common-sense knowledge that individuals receive in their daily lives, massively parallel computer architectures utilizing neural network technologies are required. Social neural networks allow individuals to dynamically interact and exchange information about their world. Figure 5 illustrates how biological neurons are modeled within artificial neural networks (Farooq, 2000).

Biological Neuron   **Artificial Neuron**
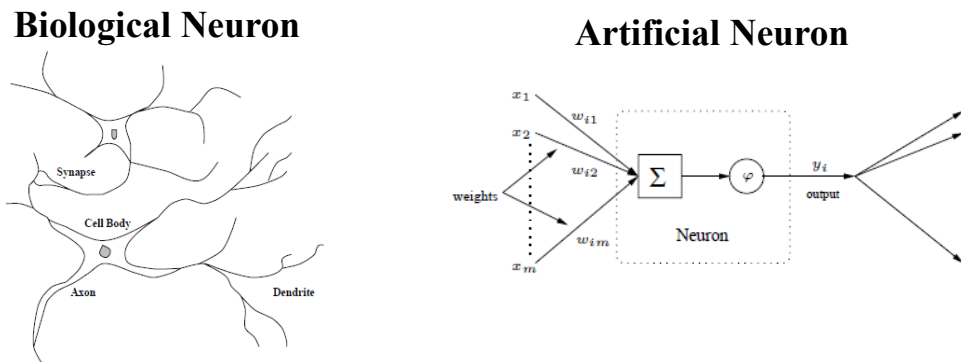
Figure 5: Biological Neuron versus Artificial Neuron

SWARM

SWARM technologies, similar to neural networks and crowd sourcing, utilize biological phenomena to model computer applications and systems. Swarm Intelligence, like neural networks and crowd sourcing (collaborative social- internet interconnections – doubly-multiply linked minds) provides the foundations to address what Bonabeau, Dorigo, and Theraulaz (1999) indicate researchers will find appealing about swarm intelligence in that "at a time when the world is becoming so complex that no single human being can understand it, when information is threatening our lives, when software systems become so intractable that they can no longer be controlled, swarm intelligence offer an alternative way of designing "intelligent" systems, in which autonomy, emergence, and distributed functioning replace control, preprogramming, and centralization (Bonabeau, Dorigo, and Theraulaz, 1999, page xi). At a software level, Stefansson (1999) discusses in his UCLA Swarmfest conference tutorial some ways the swarm intelligence is modeled in dynamic agent-based systems where various aspects of agents in differing states provide input into what is analyzed by the observer system (Stefansson, 1999, Page 8). Swarm agents are autonomous individual objects that collectively provide a clearer picture of the state of the swarm at any moment in time, similar to the way a more direct democracy should collectively represent all members of the society.

Virtual Reality

Virtual Reality involves, for our purposes, the application of computer 3D vision and animation technologies to simulate various aspects of a virtually built reality including democratic environments.   Though a number of resources (e.g. Gobbetti, 1998, Mazuryk, 1996, McLellan, 2004) discuss the origins of virtual reality occurring in the 1960s, and even one references the origins to Cro-Magnon drawings dating back to 15,000 B.C.E. on Caves as origins to virtual reality (Packer, 2005), the reality is that at the point of existence of sensing organisms the virtual realities were formed by the organisms within their memories in order to live and survive within their physical and social environments such as work and home. These sensory capabilities of organisms allowed them to build bio-chemical virtual knowledge structures about their world similar to the way artificial intelligent systems build virtual realities within their memory and storage banks. Most people have come to know virtual reality as the 3D graphics animation used in various computer systems hardware and software interfaces.

Virtual reality is used in various social environments where democracy becomes a key aspect to enabling innovative and creative work and home environments. Virtual reality is used in various aspects of the built environment from designing and engineering buildings and infrastructures (transportation and utilities) to medical applications and behavioral health therapy. These applications of virtual reality technology take on many forms that enable the user of the technology to interact with the virtual environments to gain important insight into various aspects of the reality to better understand environments.

Some examples of virtual reality applications are shown in the following figures: Figure 6: architectural design, Figure 7: aircraft design, Figure 8: eye surgery, Figure 9: flight simulation and training, and Figure 10 molecular exploration (Mazuryk, 1996).

Figure 6: Architectural Design
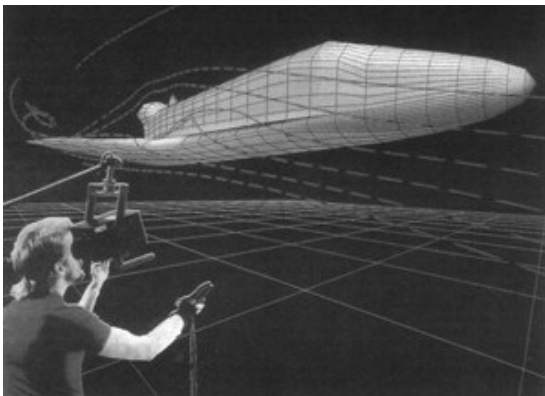
Figure 7: Aircraft Design
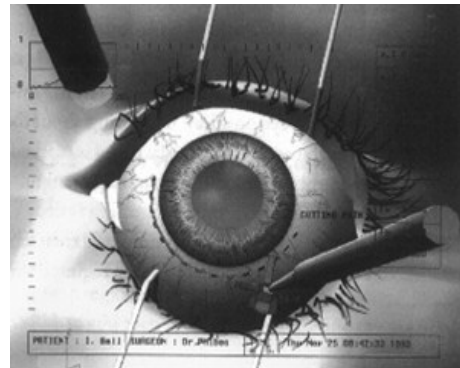
Figure 8: Eye Surgery

Figure 9: Flight Simulation and Training

Figure 10: Molecular Exploration

As we discussed earlier, virtual reality technologies provide an important foundation to geospatial technologies as well where virtual realities can be built based on actual measurements and models of the real world. These built realities can be used in immersive environments allowing individuals to experience the full impact of a virtual reality such as those found in implementations of CAVE Augmented Virtual Environments (CAVEs). The image in Figure 11 provides a sense of how the CAVE can be implemented (Jalkanen, 2000). The images projected onto the walls of the virtual reality CAVE are similar to the shadows projected onto the Cave walls in Plato's Allegory of the Cave, which ultimately affect the shadows of biochemical processes within the human brain, the shadows of our realities (Haymond, 2005).
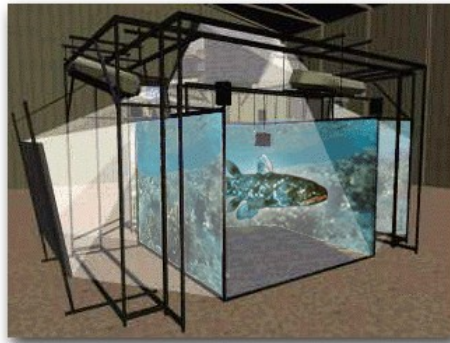
Figure 11: The CAVE – An Immersive 3D Virtual Environment

So how do all these technological advances affect the future of democracy in our lived environments? These advances enable us as individuals to more effectively model and understand our world and how we can impact the way we govern ourselves in work and home environments and the world around us.

Bringing IT Together for Democracy

The various technologies discussed in this chapter are key components in effectively supporting democracies within social environments, including work and home environments. The advanced technologies allow members of a society to identified and create more just, fair, equitable, healthier, safer, and productive social environments. Through the integration of these technologies from electronic democracies to virtual ethnographic research systems (which will be discussed further in chapter 4 related to the Research Design), robust information systems can be assembled that mash up large amounts of data through information knowledge bases that empower individuals to develop a clearer picture of how they can more effectively participate and affect their social institutions allowing them to make their daily lives more democratic, healthy, and productive.

The next section looks at the research design of a prototype for a Virtual Ethnographic Research System Architecture (VERSA) and how this system architecture can utilized advanced technologies like the ones discussed in this chapter to dynamically capture and analyze participants input and enables participants to learn more about democratic work environments. By utilizing advanced technologies, as discussed in this chapter, we can better design democratic research systems that will deliver a deeper understanding of how important democracy is in our daily lives and how we can be more effective, healthier, happier, and productive members of our society, building a democracy of the people.

Chapter 4

RESEARCH DESIGN

"There is one safeguard known generally to the wise, which is an
advantage and security to all, but especially to democracies against
despots – suspicion." Demosthenes

Research Design Methodology

We often do not look beyond an employee's existing work conditions to

the impact that their work conditions and situations have on their home, family,

community and health.   The research design methodology utilized in this

dissertation research provides a pilot test of a dynamic online (virtual) survey

system that enables long-term interaction with participants, enabling a more

ethnographic affect from the information gathered from participants' interactions

with the system as their research and changes to questions are tracked by the

system. This provides greater insight into how participants view the impact of

non-democratic work and home environments not only the employees themselves,

but on their overall health and well-being at home as well as their families and

community's health and well-being.

The research design for this dissertation involves development of a

prototype built upon the concepts of a virtual ethnographic research system as

discussed in chapter 3. The prototype methodology involves both quantitative

and qualitative analysis as participants are able to interact with the system to

perform research or change their answers at any time over a one month period.

This enables the system to track their learning processes and gain better insight into why participants answered the research questions as they did.

The methodology is designed to allow testing of a more flexible and dynamic research mechanism addressing a number of the concerns related to traditional research methods as discussed in chapter 3. The methodology supports the foundations of an interactive communicative learning system that allows research participants continuous access to the online system that not only enables them to answer and update various survey questions but also allows them to search out additional information on democracy and their rights in the workplace and at home and then come back to the system to change their answers to any question they so choose to provide more thought-out and accurate answers.

The methodology adopted for this study lends itself as a prototype for future research that integrates the concepts of longitudinal virtual ethnographic research methods that enable researchers to better understand the concepts and issues that participants have within the various social environments they live in. Since the research design provides a mixed methodology approach that can be dynamically changed by the feedback from research participants or changes in the research environment itself, there are great opportunities for this research methodological approach to become a continuous interface for on-going public policy and program evaluation using the technologies discussed in chapter 3. This can address the issues and concerns related to the health and well-being as well as the productivity of individuals throughout society, creating a more democratic and humane social environment for everyone.

Research System Design

The research system design was developed with technologies and capabilities based on virtual ethnographies as discussed in chapter 3. The design integrated various concepts and knowledge based on employment law, managerial and organizational democracy, and other democratic concepts discussed in chapter 2. The virtual ethnographic research system design developed in this dissertation allows the greatest amount of flexibility in defining the database and web application interfaces enabling future research systems to build upon the dynamic knowledge gained during the research process. This allows research staff to continually add information throughout the research study.

The dissertation is a prototype of the virtual ethnographic research system design developed using standard web and database technologies. There were several systems development methodologies and techniques utilized in the design that include; 1) Structured Systems Analysis and Design process data flow diagrams (DFDs) (these DFDs are based on Gane-Sarson symbology (Whitten, 1989, pp. 182-183) and are similar to the system design methods used in various Computer Aided Software Engineering (CASE)), and 2) Uniform Modeling Language (UML) (Rumbaugh, 1999) techniques using Microsoft Visio is shown in Figure 12, a Dissertation Research System Design Process Data Flow Diagram. The Data Flows (Arrows), Data Stores (Tables), Processes (Tasks/Functions), and Entities (People, Departments, Organizations, etc.) are used to architect and define the system requirements.
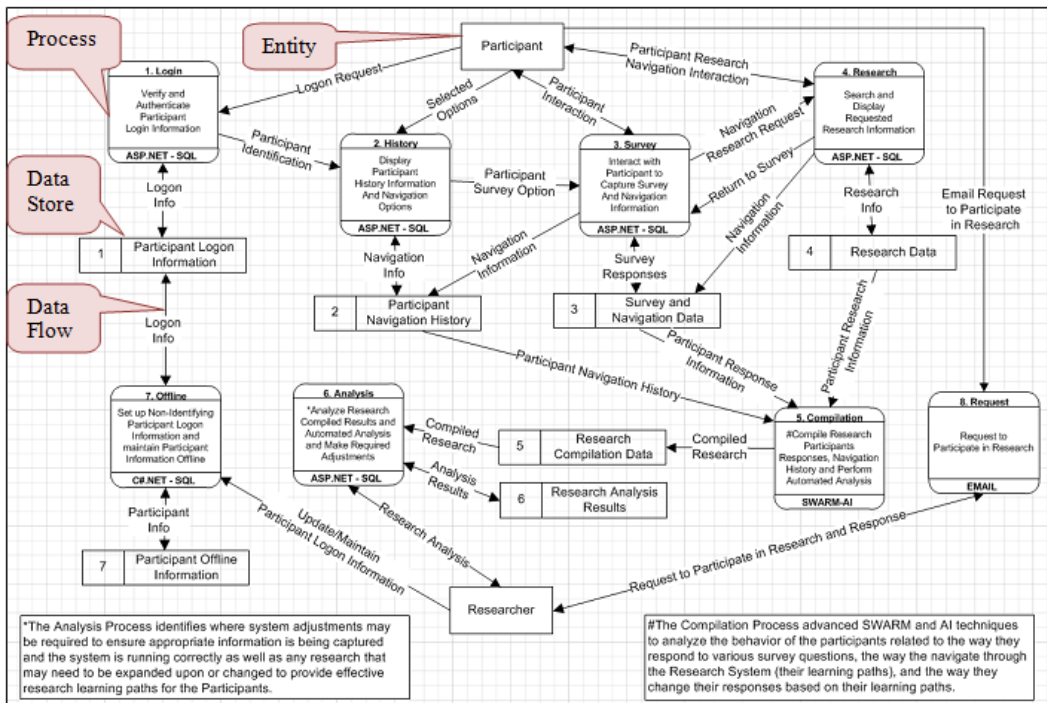
Figure 12: Research System Design Process DFD

The process data flow diagram (DFD) starts out with the login process (Process 1) where the participant login information is verified in dissertation research system. The history process (Process 2) provides information on the participant's interaction with the system so that as the participant navigates to previous answers and research information any changes to previous answers or additional research page visits are tracked. This allows participants to be brought back to the last page they were on in their previous session. It allows participants to change their answers which can identify their general learning paths. The research process (Process 4) allows participants to seek additional information and tracks their research page visits.

The system design DFD processes 5 through 8 are backend processes controlled by the researcher. Here is where the compilation process (Process 5) takes the information captured from the participants in the system and compiles the data for analysis. The analysis process (Process 6) involves taking the compiled data and making suggested adjustments to the system based on and analysis of the participants learning processes via the research interface. The system can then become more effective in capturing the data required to support the specific research such a democracy in the workplace. The offline process (Process 7) allows the researcher to maintain a secured database table with participants' contact information that is separate from the survey that contains a generic user name and password. The final process (Process 8) involves handling requests from potential research participants who have either heard about the research or were suggested by current participants. This is where, in a longitudinal study, researchers have the opportunity to better understand the community and social relationships of participants and those interested in the research.

The system design documentation (see Appendix A) also includes the initial screen layout design for the logon screen and questionnaire screens used in the initial development of the system. The final implementation of the system looks different from the original design and can be reviewed in chapter 6. Microsoft Visio software was used in developing the high level data model shown in Figure 13.
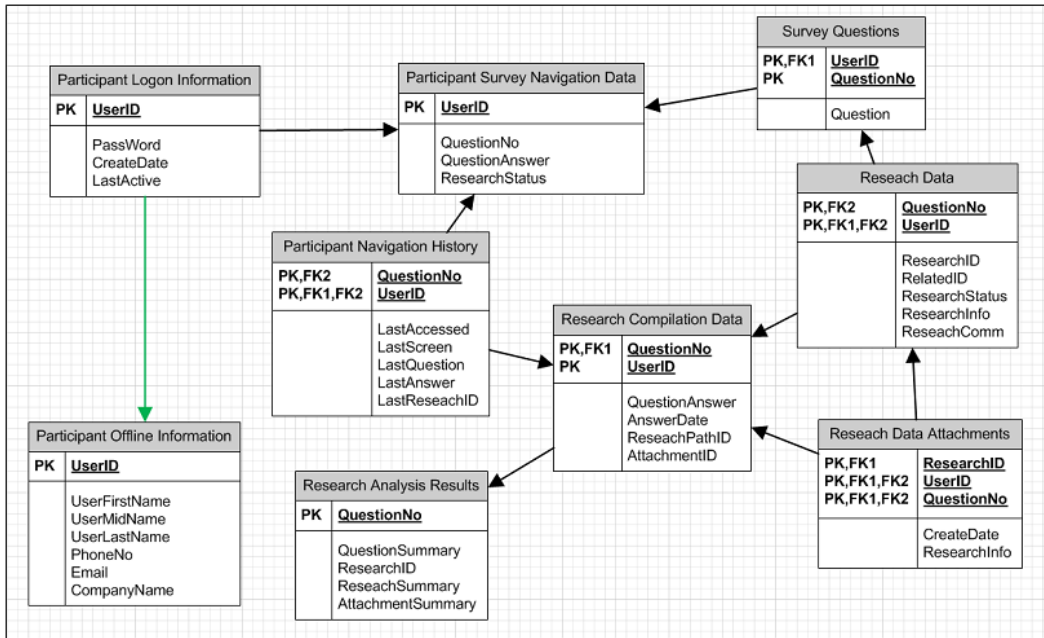
Figure 13: Research System Design High-Level Data Model

The system high level data model provides design information used to create the required relationships between the various data stores (tables), which capture, track, compile, and analyze the participant interaction with and input into the system. In the high level data model shown in figure 13, note that within each data store there is a Primary Key (PK) field for uniquely identifying each record in the data store. Along with the primary key a Foreign Key (FK) field may also exist, which maintains the data necessary to link to other data stores, allowing the system to bring together data from the various data stores in a manner that enables data compilation necessary to support dynamic and advanced research analysis. See Appendix A for System Design documentation.

Research Question

The primary underlying research question concerns participants'

perceptions of the meaning of democratic principles such as freedom, liberty,

justice, and equality, and their understanding of the effect of democracy on the

health and productivity of individuals within social environments such as their

workplace and home. In other words, do the research participants find that there

is a positive, negative, or no relationship between democracy in the workplace

and at home and their health and productivity as individuals within these

environments as shown in Figure 14? Figure 14 models the effects of introducing

democracy into work and home environments on individuals and their health and
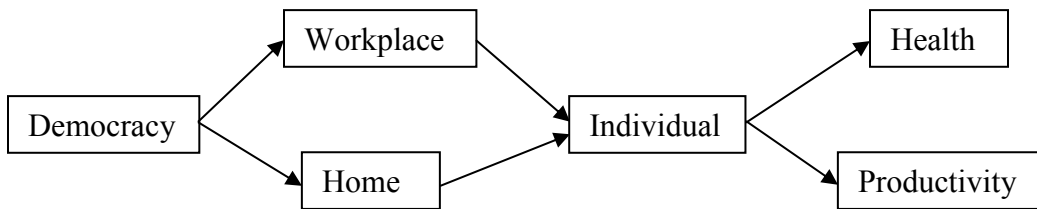
productivity.

Figure 14: Relationship of Democracy to the Health & Productivity of the
Individual in the Workplace and at Home

This research examines the participant's view of the effects of democracy

on workplace and home environments and allows them to educate themselves on

the research subject and then return to the system to change their answers. The

ability to track a participant's answers over time provides a better understanding

of how participants gain insight into the issues or questions from further reflection

and experiences.

The survey questions were developed from data collected in interviews and meetings with various public agency personnel including a Human Resources director and a Management Performance and Accountability Office manager. The survey questionnaire was also reviewed by various ASU professors and survey questionnaire experts.

Based on these reviews, the questionnaire was restructured with the goal to gain the greatest insight on participant's perceptions of the effects of democracy (or the absence of democracy) on freedom, liberty, justice, and equality in the workplace and at home, and ultimately on health and productivity. The online survey questionnaire contains two major sections: 1) Qualitative Questions, and 2) Quantitative Questions. The online survey system begins with the qualitative questions to give participants more time to spend on the details of situations and experiences. The demographic questions were placed at the end of the online survey system so that they felt more comfortable about the survey by the time they came around to answering personal information.

The online survey also contains links to descriptive information about several of the terms that tend to be elusive in definition or understanding. This provides participants with a clearer understanding and operational definition of the terms. These links were placed next to the related questions containing the terms that were determined to need more explanation, such as democracy and workplace democracy.

The qualitative survey questions that were utilized in the online survey research system included the following:

1. How would you describe democracy as it relates to freedom, liberty, justice, and equality?

> Detailed Response….

2. What rights do you think should exist in the workplace and at home?

> Detailed Response….

3. What does workplace democracy mean to you and how do you think it should work?

> Detailed Response….

4. What situations have occurred in your current or past work environments that you would consider to be democratic or that have made you feel more productive, motivated, innovative, happy and/or healthy?

> Detailed Response….

5. What situations have occurred in your current or past workplace that made you feel like you were treated unfairly, made you unhappy, and/or appeared to negatively affect your health or create greater stress for you and how do you think it could have been resolved?

> Detailed Response….

6. What concepts of democracy do you think can be implemented in a home environment and what do you think the impact might be on the members of the household?

> Detailed Response….

These qualitative survey questions provide key foundational understandings of participants' views on the concepts of democracy and workplace democracy as related to their specific life experiences, beliefs, and situations.

The following quantitative questions relate to the participants' general belief about the importance of the concepts on a scale of 1 to 5 where 1 indicates they Strongly Disagree, 2 indicates they Disagree, 3 indicates they neither Disagree or Agree, 4 indicates they Agree and 5 indicates they Strongly Agree:

		1	2	3	4	5
1.	I have a good understanding of what democracy means.					
2.	Individual rights are important in a democracy.					
3.	Freedom is important in a democracy.					
4.	Liberty is important in a democracy.					
5.	Justice is important in a democracy.					
6.	Equality is important in a democracy.					
7.	Happiness is an important consideration in a democracy.					
8.	Participation is required in a democracy.					
9.	Democracy should be a way of life.					
10.	Democracy should exist in the workplace.					
11.	Democracy should exist in the home.					
12.	Stress in the workplace can affect an employee's health.					
13.	Democracy in the workplace can improve an employee's health.					
14.	Democracy in the workplace can improve an employee's productivity.					
15	Everyone in the home should be treated fairly and with respect.					
16.	Everyone in the workplace should be treated fairly and with respect.					
17.	Everyone in the workplace should be able to participate in decisions that affect their work and pay.					
18.	Non-democratic home environments can create unhealthy relationships.					
19.	Non-democratic work environments can create unhealthy relationships.					
20.	My current work environment is democratic.					
21.	My current home environment is democratic.					
22.	My current work environment is a healthy environment.					
23.	My current home environment is a healthy environment.					
24.	My current work environment allows me to be productive.					
25.	My current work environment allows me to be innovative.					
26.	My current work environment motivates me.					
27.	My current work environment allows me to participate in decisions that affect my work and pay.					
28.	I am happy in my current work environment.					
29.	I am happy in my current home environment.					
30.	I am treated fairly and happy in my current work environment.					
31.	I am treated fairly and happy in my current home environment.					
32.	More democratic home environments can improve a family's health.					

Implementation Strategy

The research design implementation strategy involved a number of phases of development for the system and processes, as well as interviews with both health care and local government agencies. Initially, I proposed to purchase the servers and software and set up an infrastructure necessary to support the development of a prototype of the Virtual Ethnographic Research System Architecture (VERSA).   After extensive research, I determined that it was better to set up the system infrastructure on a Cloud server (An Internet Server Service). Based on available accounts that already existed at Amazon, an Amazon.com Cloud computing environment was chosen to host the system.

The development of the VERSA web application prototype utilized Microsoft ASP.NET 4.0 and SQL Server 2008 R2 database technology. The application development went through numerous iterations and testing before it was placed onto the Amazon Cloud infrastructure. Though the research design documents provided the foundation for the VERSA web application prototype, a number of adjustments were made to make the research system more flexible and efficient. A campaign notification application was added to the system to allow mass emailing to potential participants, such as those on Listservs. Another expansion to the web application prototype was the ability to run multiple campaigns and questionnaires, and the ability to dynamically change participant's assigned campaigns or questionnaires. The web application prototype also allows dynamic changes to the questions, questionnaires, and the creation of new questions as needed.

Though the original intent was to involve government and health care agencies in the research, after meeting with several personnel in both local government and health care agencies, it became clear that they were not interested in having their employees participate in research on Democracy in the Workplace. A number of health care public relations officials indicated that they do not allow their employees to take external surveys and that they perform all the surveys they need internally. The government managers I interviewed also felt that their employees were already involved in enough surveys; and, since they had not heard of "democracy in the workplace," they felt their employees would be confused by the terms. Needless to say, I was a little frustrated by the interviews I did with the various health care and local government agency officials. I eventually checked into using the Arizona State University Graduate Student Listserv (containing over ten thousand potential participants) and this alternative turned out to be a much more cooperative and supportive option.

Using the ASU Graduate Listserv, an introductory email letter was prepared to provide potential research participants background information about the research, an incentive (which as a drawing to win an Apple iPad computer), a date for the completion of the survey, a description of the voluntary aspects of the research and the right to be removed from the research at any point and time, a generic signup username and password as well as the signup web site, and finally, informed participants of anonymous protections in the research results. The introductory signup email letter is located in Appendix B.

Once the participants signed up for the research via the signup web site using the generic username and password provided in the initial email, they were emailed a Welcome letter with their personal system generated username and password. An example of the Welcome email can be found in Appendix C. Participants then used the system generated username and password to log into the research web site at www.workplacedemocracy.info. This web site URL domain name was established through ReadyHosting.com Internet hosting service and references the web application located on the Amazon.com Cloud server.

The Amazon.com Cloud server SQL Server 2008 R2 database was backed up on a weekly basis during the Survey process and the backup was exported to a separate computer to analyze the status of the surveys. After it was discovered that a large number of participants had logged into the research system to register but had not completed the survey, I sent a notification reminding the participants who had not completed the survey that they are required to complete the survey in order to be eligible to win the Apple iPad computer in the upcoming drawing.

The prototype of the Virtual Ethnographic Research System Architecture (VERSA) was designed and developed to allow the research survey questions to be integrated into a dynamically changing system enabling various links to research pages and linked to online research literature for participants interested in gaining more background on democracy, workplace democracy, and their legal rights in the workplace and at home.

Demographic Research Sample

The online dissertation research system Virtual Ethnographic Research System Architecture (VERSA) prototype had over three hundred and eighty Arizona State University graduate students register to participate in the survey which included the qualitative, quantitative, and demographic questions.

The demographic questions provided insight into possible influences that may have affected the participant's view of democracy in the workplace and at home. In future research, the demographic data will be used to look for patterns of understanding based on the experiences and background of the individual participates relative to their qualitative and quantitative answers. Since nearly all the participants were graduate students, their education levels may have influenced their knowledge about democracy and democracy in the workplace and home.

Table 2 provides the percent of participant responses for each of the demographic questions. A number of the questions had to be coded and categorized in order to effectively summarize the participants' responses into percentages, which include the college majors which were associated to the corresponding College or School, cultural/spiritual/religious backgrounds which were associated with more general categories, and the participant's religion or faith which were also associated to more general categories and provided insight into the background beliefs of the participants.

Table 2
Percent of Participants Responses to Demographic Questions

#	Demographic Question	Percent Responses Per Answer					
1.	What is your age?	18-24	25-34	35-44	45-54	55-65	66 or Older
		21%	51%	18%	8%	2%	0%
2.	What is your gender?	Female			Male		
		65%			35%		
3.	Are you currently employed?	Yes			No		
		87%			13%		
4.	In what area of work are you currently employed?	Private-sector	Healthcare	Government	Education		Non-Profit
		18%	8%	9%	60%		5%
5.	At what level within the organization do you work?	Non-supervisory		Supervisory	Management		Executive
		72%		12%	11%		5%
6.	How many year have you been employed in your current position?	1 Year or Less	2-5 Years	6-10 Years	11-15 Years		16 or More Years
		49%	40%	7%	1%		3%
7.	How many year have you been employed during your lifetime?	Less Than 5 Years	5-10 Years	11-15 Years	16-20 Years		More Than 20 Years
		15%	36%	19%	14%		16%
8.	What level of education have you obtained?	None	High School	Trade School	Bachelor	Master	PhD	Post Doctorate
		0%	0%	0%	46%	50%	3%	1%
9.	*What was your major(s) in college (if applicable)?	AS	BU	DA	ED	EN	JO	NH	PP	SU
		57%	11%	3%	8%	13%	1%	2%	4%	1%

*College Major Categories include: AS (Arts & Science), BU (Business), DA (Design & Arts), ED (Education), EN (Engineering), JO (Journalism), NH (Nursing and Health), PP (Public Programs), SU (Sustainability).

#	Demographic Question					
10.	What is your marital status?	Married	Single	Divorced	Widowed	
		45%	48%	7%	0%	
11.	How many children do you have?	None	1 Child	2 Children	3 Children	4 or More Children
		67%	11%	13%	8%	1%
12.	How many children are under 18 years of age?	None	1 Child	2 Children	3 Children	4 or More Children
		75%	8%	13%	4%	0%
13.	Does your partner/spouse work full-time?	N/A		Yes		No
		34%		50%		16%
14.	Do your parents or grandparents live with you?	Yes			No	
		7%			93%	
15.	How healthy are you currently?	Good		Fair		Poor
		83%		17%		0%
16.	Is there anyone in your household with ongoing health issues?	Yes			No	
		25%			75%	
17.	# What are your cultural, spiritual, and/or religious background/beliefs?	NA	AG	AT	BU	CH	HI	HU
		24%	7%	8%	3%	37%	1%	4%
		JE	JU	MO	MU	SP	SA	UN
		2%	1%	3%	1%	7%	1%	1%

#Religious/Cultural/Spiritual Categories include: NA (Not Applicable), AG (Agnostic), AT (Atheist), BU (Buddhist), CH (Christian), HI (Hindu), HU (Humanist), JE (Jewish), JU (Judaism), MO (Mormon), MU (Muslim), SP (Spiritual), SA (Spiritual-Agnostic), UN (Unitarian).								
18.	Which of the following best describes you?	Native American	Caucasian/ White	Hispanic/ Latino	Black/ African American	Asian, Pacific Islander, Hawaiian		Other
		1%	74%	7%	2%	11%		5%
19.	How often do you attend organized religious services?		Frequently	Occasionally		Rarely		Never
			22	18		28		32
20.	* What religion or faith do you generally subscribe to?	NA	AG	AT	BU	CH	HI	HU	IS
		38%	4%	5%	2%	32%	2%	1%	2%
		JE	JU	MO	MU	PA	PH	SP	UN
		2%	1%	4%	1%	1%	1%	3%	2%

*Religion or Faith Categories include: NA (Not Applicable), AG (Agnostic), AT (Atheist), BU (Buddhist), CH (Christian), HI (Hindu), HU (Humanist), IS (Islamic), JE (Jewish), JU (Judaism), MO (Mormon), MU (Muslim), PA (Pagan), PH (Physics), SP (Spiritual), UN (Unitarianism).

<u>Demographic Questions #1-2</u>

The first 2 demographic questions provide an overview of the age and gender make-up of the participants. As shown in Table 3, the majority of participants are between 25 to 34 years of age, many of whom are just starting out in their careers. Some of these ideals were presented in the discussions within the qualitative question responses from the participants.

An important demographic consideration is the difference between female at 65% versus male at 35% participants. This ratio actually reflects the differentiation that I have found to exist over the past 30 years as I talked to people about democracy and democracy in the workplace and in the home. Women appeared to be more interested in these concepts. Most men I discuss these ideas with were either not interested or felt that democracy was strictly about voting. Women may be more aware of the issues of tyranny and oppression and the need for democratic social environments such as the workplace and home because they are often aware of the inequalities of power and control in various work and home environments. I often find that people who have been oppressed, men or women, tend to be more aware of the conditions that lead to oppression.

Demographic questions 3 through 7 delve into the participants work related

demographics. In table 3, question 3, it is clear that a large percentage, 83%, of

the participants are currently employed with over 50% of them in their current

position for 2 or more years (question 6), and more than 80% with 5 or more

years of employment experience (question 7). This is important to some extent in

understanding that a large portion of the participants are currently living the

conditions of a workplace so they should be able to provide a clearer

understanding of the actual lived environment. This does not mean that those

who are not currently employed do not have aspirations towards more democratic

work environments.

Democratic question 4 the majority of the participants, 60%, are employed

within the Education industry. This will of course skew the applicability of the

results to more Education industries, but overall still provides an important insight

into employment conditions of the participants all the same.

<u>Demographic Questions #8 and 9</u>

Demographic questions 8 and 9 deal with the level of education and participants' associated major in college. Given that the online system survey was sent to ASU graduate students, the majority of students have a Bachelor and Master degree at 96%. Participants are well educated, which creates a bit of a skew in representing the general population. However, the sample does provide an important opportunity to get great input from highly educated participants on their views of what democracy means and how it can be applied in work and home environments.

In coding which colleges each of the participant's majors related to, I had to research do extensive online research to look up each major, or what I could find was closest to the identified major, and then look up which college/school each of the major was offered.

<u>Demographic Questions #10-16</u>

Demographic questions 10 through 16 paint a more personal picture about the participant's family and home life. Question 10 shows that there is nearly equal representation from both married and single participants. A majority of the participants, 67%, do not have children but of those who have children, a large percentage is under 18 years of age as indicated between questions 11 and 12.

The majority of participants indicated that their partner/spouse works full time at 50% but most do not have parents or grandparents living with them as indicated in questions 13 and 14.

In reviewing the participants' responses to their current health, they appear to be in good health at 83% indicating this in question 15. In question 16, though 75% of the participants indicated that no one in the household had any ongoing health issues, 25% did indicate that they did.

<u>Demographic Questions #17-20</u>

Demographic questions 17 through 20 provide data on the religious, cultural, and ethnic background of the participants. Though a large percentage of participants indicated that their cultural, spiritual, religious backgrounds and beliefs were "Christian" at 37%, there was an interesting distribution within the categories that were coded from the responses as shown in Figure 15. Given the cultural, spiritual, and religious backgrounds in question 17, these were then contrasted with the religion or faith categories, which provided an even more interesting distribution as shown in Figure 16.

When asked which of the following best describes them in question 18, the majority of participants identified themselves as Caucasian/White at 74% with 11% Asian, Pacific Islander, or Hawaiian, 7% Hispanic/Latino, 2% Black/African American, 1% Native American and 5% all Others. In order to analyze how representative the sample is to the larger population in Arizona and nationally, I downloaded the United State Bureau of the Census QuickFacts data for Arizona and the United States. See Table 3 for the comparative categories between the results in question 18 and the Arizona and USA percentages by US Bureau of the Census categories.

Table 3
Percent Population by Ethnic Category – Census 2011

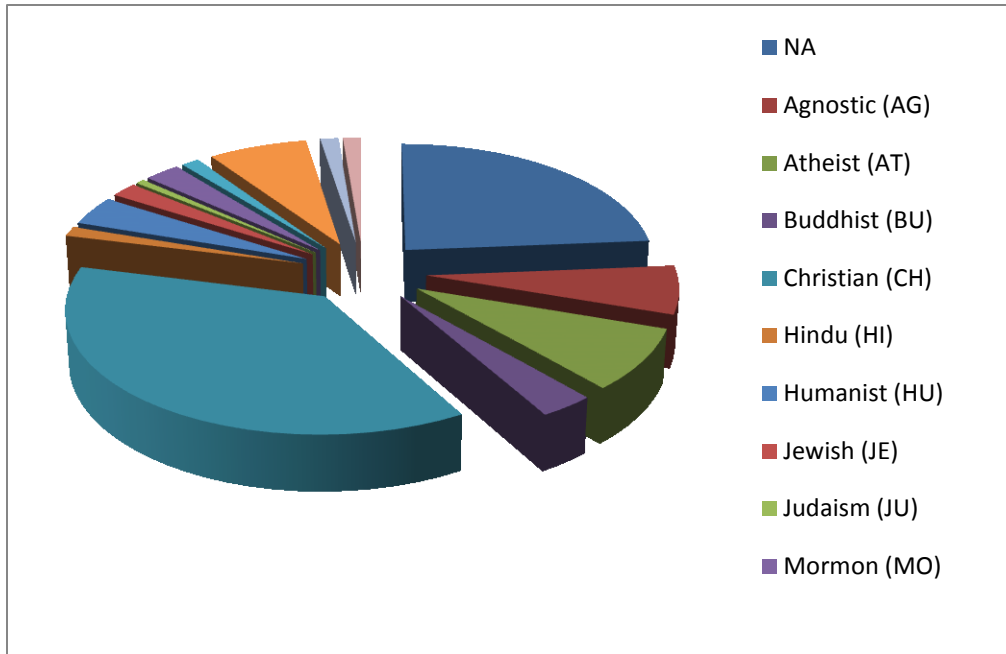| Census 2011	White	Black	American Indian and Alaska Native	Asian	Native Hawaiian, Pacific Islander	Hispanic or Latino	White not Hispanic
Arizona	84.6%	4.5%	5.2%	3.0%	0.3%	30.1%	57.4%
USA	78.1%	13.1%	1.2%	5.0%	0.2%	16.7%	63.4%

Figure 15: Chart of Percent of Participants by their Cultural, Spiritual, and Religious Background Beliefs - Demographic Question #17
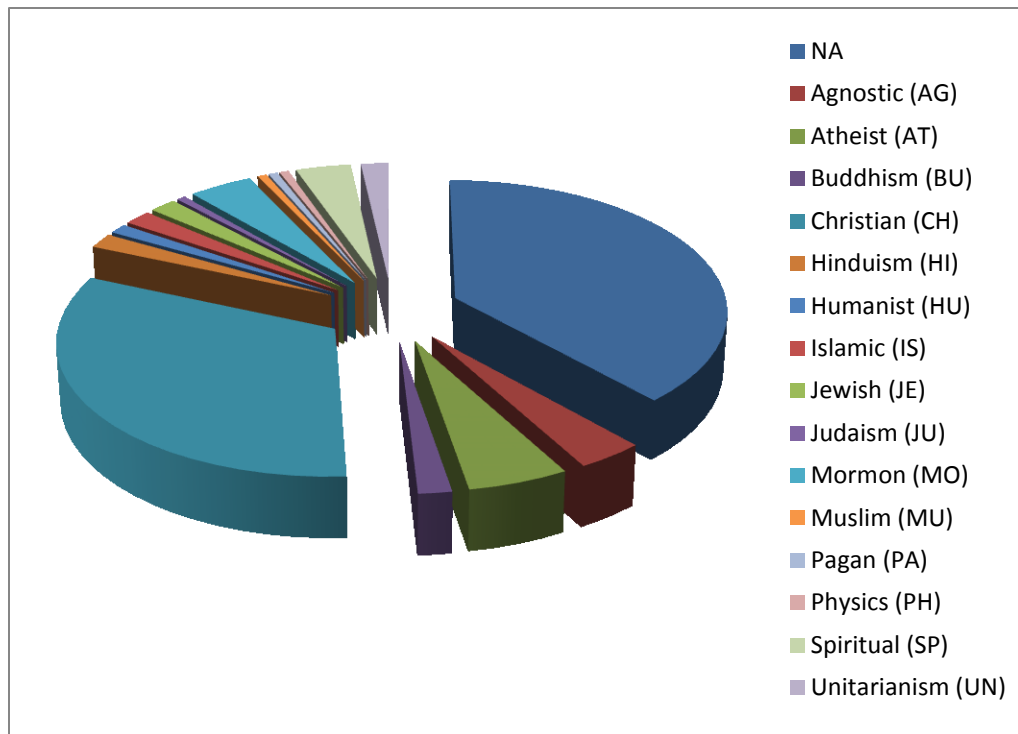

Figure 16: Chart of Percent of Participants by the Religion or Faith to which they General Subscribe - Demographic Question #20

In many discussions prior to this research with individuals who were not graduate students and many who did not have bachelor degrees, I found that most of them did not have a clear understanding of democracy and were definitely confused by the idea of democracy in the workplace or in the home. Many thought of democracy as voting (even a number of the graduate students in this study had the same descriptions for democracy in the qualitative questions) and were not aware of democracy as an encompassing term for allowing people (demo) to have power (Kratos) over their lives in general. This is of course an important issue in Justice Studies and we research social environments that are oppressive and/or tyrannical were people have little or no power in their lives.

Chapter 5

RESEARCH RESULTS AND ANALYSIS OF DEMOCRACY IN THE

WORKPLACE AND AT HOME

"Knowledge will forever govern ignorance; and a people who
mean to be their own Governors, must arm themselves with the
power which knowledge gives." James Madison, 1822

Research System Results

The online dissertation research system Virtual Ethnographic Research

System Architecture (VERSA) prototype took over fourteen months to build with

a number of adjustments to allow automated mass emailing's to prospective

participants based on the Arizona State University graduate student Listserv.

For the most part, the prototype worked very well and participants were

able to both register for the research and after receiving their generic username

and password, they were able to log onto the survey system and complete all the

questions. During the research process though, a number of important discoveries

were made related to both the research system and the way participants answered

questions and interacted with the system.

During the initial design and development phases, I had a concern about

having participants' timeout while logged into the research system. I had

recommended that we implement an AutoSave to make sure that the participants

did not lose any of their input but the developer recommended providing a

warning.

Needless to say, several participants were kicked off the system and lost their input. This occurred primarily in the qualitative questions page which is where many participants wrote small novels. Having the qualitative questions up front was an issue for some participants who felt the survey was going to take too long because they did not realize that the next two pages of the survey were quick quantitative and demographic questions.

A number of the participants who were kicked off the system and lost their input emailed me and I followed up with a suggestion that they enter their qualitative answers into a Microsoft Word document and just copy and paste their answers into the survey system. A number of them followed up with me indicating that this suggested worked very well for them. I still feel there should be a better system solution to ensuring that any data entered into the system is automatically saved.

The research system initial generic signup login based on a general userid and password worked well. Figure 17 provides a view of the signup web page where participants used the Listserv email common userid and password to register for the research. Figure 18 shows the actual signup page where participants provided the required information to sign up for the study. There were a large number of participants who registered through the Signup page but did not come back to the system to fill out the survey based on the system generated Welcome email that was sent to them with their system generated unique generic userid and password. These participants were sent additional emails to remind them that they registered for the survey.

Figure 17: Research System Signup Login Page

Figure 18: Research System Signup Registration Page

After the participants signed up and registered through the Research

Signup site, they were automatically emailed a Welcome email with their system

generated specific logon userid and password as well as the URL for the survey

web site (see Figure 19) which is different from the signup web site (Figure 17).

The research login page (Figure 19) provided 3 links along the top of the

page; Philosophy, Objective, and Contact. The Philosophy link (See Figure 20)

provides a page that describes the basic philosophy behind the research while the

Objective link (Figure 21) provides a description of the objective of the research.

The contact links provides information on how to contact the researcher in case

there are issues logging on or if someone is interested in participating in the

research.

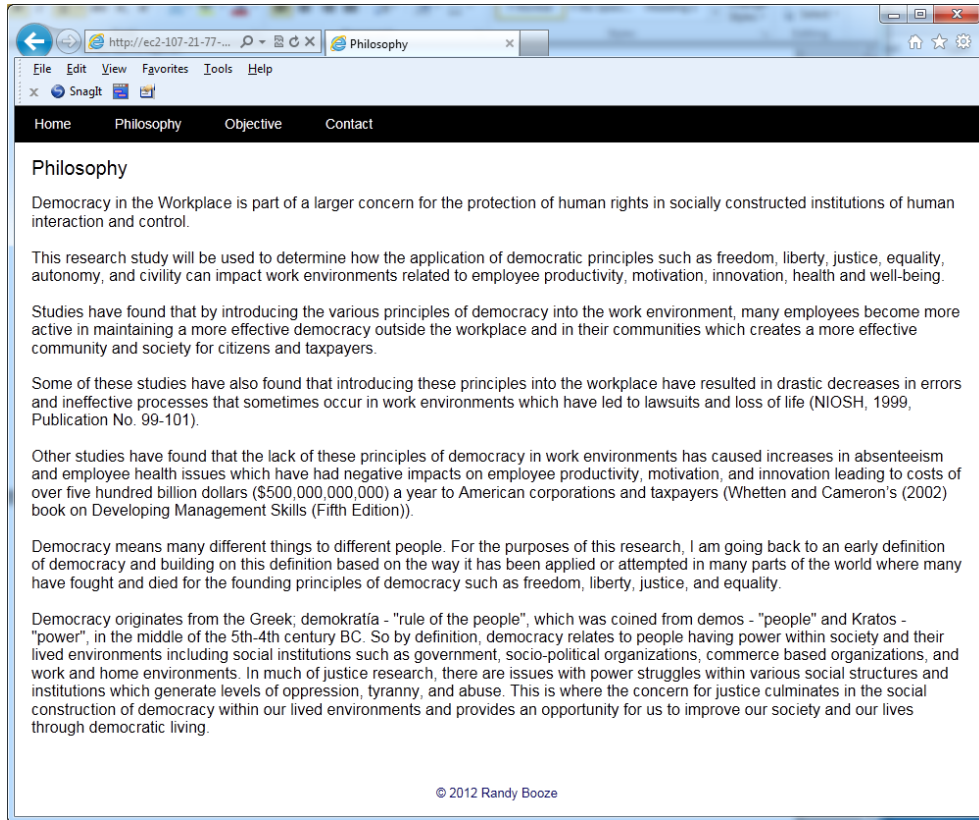Figure 19: Research System Login Page

Figure 20: Research System Philosophy Page

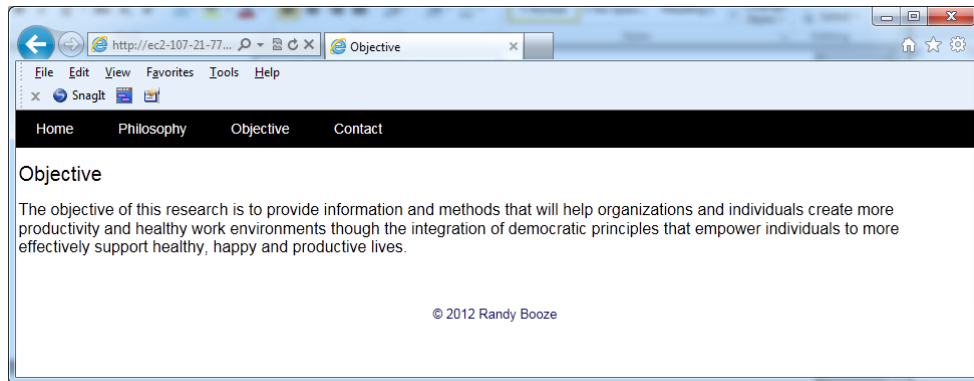Figure 21: Research System Objective Page

Once the participant has logged in to the research site, they were presented with the qualitative questions page (Figure 22). This may have created problems by not providing an introduction page that described the format of the research and again explained the longitudinal nature of the research system.

Figure 22: Research System Qualitative Questions Page

On the Qualitative Questions page (Figure 22) of the research system there are Research links next to the questions that provide additional definitions of the various terms within the associated questions (e.g. definitions of democracy and workplace democracy). The participant can chose to skip the first page of qualitative questions and move on to the second page of quantitative questions (Figure 23) or the third page of demographic questions (Figure 24).

Figure 23: Research System Quantitative Questions Page

Figure 24: Research System Demographic Questions Page

Based on a review of the participants input on each of the research system

pages, the questions were clear and precise enough to effectively capture the data

desired in the research. It was also discovered that a number of participants

utilized the links to the research pages and came back to change their original

answers indicating that a longitudinal research linked survey system may provide

more accurate answers as participants are allowed to come back to the system

after doing research and change their answers.

Research System Administration

The research system was managed through an administrative log on to the system that enabled the administrator to verify who had registered and who had completed the survey. The administrative tasks that are available in the VERSA prototype include the following:

1. User Management – This enabled the administrator to follow up with participants who had signed up and registered, add new participants, editing existing participant information, changing a participant's password, deleting a participant, and assigning a specific questionnaire to a participant. This includes verifying that the participants have completed the survey.

2. Questionnaire Management – This allows the administrator to create new questionnaires, edit existing questionnaires, delete existing questionnaires, and review a questionnaire's associated questions where additional questions can be added and existing questions can be edited or deleted.

3. Page Management – This is where the various research survey pages are created, edited, or deleted.

4. Category Management – This is where the category of questions title information is created or edited (e.g. Please provide a detailed description for the following questions: or For each of the following statements, please indicate whether you Strongly Disagree (1), Disagree (2), Neither Disagree or Agree (3), Agree (4) or Strongly Agree (5):).

5. Question Management – This is where new questions are created, edited, or deleted from the survey system and the question type (e.g. qualitative, quantitative, multiple choice, text) is assigned.

6. Answer Management – This allows the administrator to associate different answers in a dropdown list that are associated to a specific question (e.g. associate to the marital status question might be Married, Single, Divorced, or Widowed).

7. Content Management – This allows the creation of new information pages as well as editing of the notification/welcome emails.

8. Campaign Management – This allows the administrator to create new surveys which can have an associated questionnaire as well as a generic username and password that can be emailed out to potential participants who can then log into the research signup site to have a specific generic userid and password emailed to them. The Campaign Management tasks also include associating the Welcome email to the specific campaign. In other words, multiple research efforts can be on-going at the same time with different questionnaires.

Overall, the VERSA prototype provided a very flexible and dynamic system to manage the notification process, participant interaction with the survey, participant follow up, and the capture of the data within a unique database structure that lends itself to effective analysis of the survey results.

Research Survey Results

In the two sections of the survey questions, the qualitative section and the quantitative section, the questions were assembled to provide the ability to cross reference the answers from each of the sections. In other words, they were developed to build a better understanding of how the participant views democracy in the workplace and at home by comparing the participants qualitative answers with their quantitative ratings by topic, and comparing these answers with the demographic profile of the participants to better understand the background of the participants in explaining why they may have the differing views of the various topics. Cross-referencing the qualitative and quantitative data with the associated demographics is a focus for a future project.

One thing that I did find is that some of the participants came back to change their answers or navigate to the research pages. This capability in the virtual ethnographic research system architecture (VERSA) prototype is extremely important in ensuring that participants have the opportunity to change their answers to questions as they become more educated about the topic area of the research. Though the longitudinal aspect of the VERSA was not fully tested during the dissertation research, while interacting with the participants it became clear that as they requested further clarification on different issues, the capabilities of the prototype allowed the participants to go back into the system and adjust their answers based on my follow up with them. These changes are tracked in the system so the system is able to analyze changes in answers over time, giving the researcher an opportunity to interact with this analysis.

Qualitative Analysis

In the qualitative section of the online survey, there were over 960 written responses to the 6 qualitative questions. Many of the participants wrote extensive descriptive backgrounds related to their experiences and understandings about each of the qualitative questions which provided a pleasant surprise for the research effort. These responses were reviewed, summarized and categorized based on the general topic areas that were most applicable to the general responses related to democracy, workplace democracy, and democracy in the home related to the impact the participants perceived within various work and home environments. This information was also reviewed to determine what future adjustments should be made to the Virtual Ethnographic Research System Architecture (VERSA) back end automated processes to most affectively extract usable analysis from qualitative type answers similar to those provided in this research.

In the first qualitative question, "How would you describe democracy as it relates to freedom, liberty, justice, and equality?" many of the participants reflected on how democracy relates to freedom, liberty, justice, and equality, with various participants focusing on specific concepts like free choice, rights, a balance of rights, representation, voting, majority rule, justice, freedom, equality, with over 37 percent of participants supporting an encompassing view of democracy like participants who indicated that "Democracy is a premise of freedom, liberty, justice, and equality. Everything is balanced" and "Democracy is essential for freedom, liberty, justice, and equality."

There were a few participants, around 2 percent, who felt that democracy is a "myth" and "causes people to be disenfranchised" in a sort of "carrot" and stick scenario where they indicated that people are told they live in a democracy where they can vote and participate but are controlled by autocratic systems. Around 3 percent felt that democracy actually brings about discrimination through majority rule as demonstrated in the following responses:

"Democracy does not imply over all equality since what constitutes equality is different for everyone."

"Democracy does not always function freely. It can still discriminate certain people and democratic institutions may not be really democratic."

In the second qualitative question, "What rights do you think should exist in the workplace and at home?", the concepts of democratic rights are expanded into work and home environments to better understand what specific rights the participants believe should exist in these lived environments. Though 18 percent of the participants indicated that the rights should be encompassing in the workplace and at home ["All of the tenants of democracy - freedom, liberty, justice, and equality - should exist in the workplace and at home."], over 20 percent felt that free speech was an important part of work and home environments where you should have the "Right to speak, right to express feelings, right to raise … concerns." 17 percent of respondents felt equality was an important right in the workplace and at home where they indicated that "Everything should be fair and there should not be any privileges in the workplace. Women and men should be paid equally and treated the same way."

Overall, the majority of participants supported that the foundational rights of democracy should exist in the workplace and at home with only a few surprises from 1 to 2 percent of the participants who indicated that they were confused by the questions or one who indicated that the rights in the workplace and home should be similar to a union. Some of the other rights mentioned were related to abuse free environments, constitutional rights, rights to be free from discrimination, rights to happiness, participative rights, rights to privacy, religious rights, rights to be respected , and rights to feel safe in the workplace and home.

A large number of participants indicated a wide range of rights that should exist in the workplace and home in their responses making this an important consideration for the results of this research. While reading through the responses to this qualitative question, many of the participants provided good examples of how important these rights are to creating an effective, productive, and safe work and home environment as well as how best to improve these environments.

In the third qualitative question, "What does workplace democracy mean to you and how do you think it should work?", the majority of participants, 62 percent, indicated that workplace democracy includes a wide variety of rights, as indicated in the following example: "Workplace democracy means having a voice in the workplace, having equal rights, freedom of speech, and the right to due process." Of the 62 percent, over 20 percent, felt that participation is an important aspect of workplace democracy and that "Supervisors and managers are responsible to listen to their employees and weigh their advice carefully."

There were around 2 percent of the respondents who felt that workplace democracy does not exist as indicated by one of the participants in the following comments:

> I believe workplace democracy is a bit of an oxymoron. I have worked in several different environments and I have yet to see the workers have an actual opinion in how the workplace is structured or governed. I think the concept of a workplace democracy is a noble concept, and no more. The workplace is more of a totalitarian environment. Input from workers is occasionally considered in some environments to effect change. In those cases, majority still does not rule, it is the decision of the CEO/Director, etc. in regards to who and what stands in the workplace.

There were also around 5 percent who indicated that workplace democracy should not exist, as indicated in this statement: "Workplace shouldn't be a democracy. If you're an employee you don't get to make decisions, nor should you get a vote on how things operate."

In reading these participant's responses, it is clear that either they did not utilize the research links in the online system or they were not aware of various workplace laws that require various levels of democratic protections for individual rights in the workplace. These comments demonstrate the gap in knowledge discussed earlier in the dissertation related to workplace conditions that impact individuals (costing the U.S. over $500,000,000 a year and countless lives) and the importance of employees awareness of workplace laws such as the Family and Medical Leave Act, Americans with Disabilities Act, Age Discrimination in Employment Act, and the Occupational Safety and Health Act in order to protect the rights of individuals within workplace environments.

When discussing the concepts of workplace democracy with employees from other agencies over the past 20 years, I found very few who had heard of these concepts and many managers who indicated that no such thing can exist. I believe the reason such a high number of participants supported the concepts of workplace democracy is because they were well-educated graduate students. Given past observations, I predict that less support or understanding of the concepts of workplace democracy will be found among an uneducated population.

In the fourth qualitative question, "What situations have occurred in your current or past work environments that you would consider to be democratic or that have made you feel more productive, motivated, innovative, happy and/or healthy?", the primary situations that the participants felt were democratic and made them feel more productive, motivated, innovative, happy and/or healthy were where they were allowed to provide input, at nearly 26 percent, and allowed to participate in decision making, at 21 percent, and allowing flexible work hours, at 9 percent, as indicated in the following statements:

> When I am included in the decision making process for the overall work environment (through staff meetings to discuss events) or when I am given the tools to make my own decisions, free of micromanaging.

> In my current position my input is valued, my suggestions are requested, and they are based on what I bring to the table, i.e. my difference. This feels relatively democratic in practice to me and it encourages me to be more productive and happy

> A flexibility by my boss regarding schedules (not just 9-5, Monday - Friday, but however we best decide to split up that time requirement) has improved my happiness, motivation, and innovation with work.

Another statement related to the ability to provide input, such as "Working with people I can communicate with and who I feel will seriously consider my ideas, makes all the difference in the world for keeping me motivated and healthy," demonstrates the importance of allowing employees to provide input. These respondents show how providing opportunities for input, participation and flexibility, underlying constructs of a democracy, helped to improve their happiness, motivation, innovation, and health.

Some of the other situations described by participants included having freedom to determine how they will complete their assigned tasks at 8 percent, being treated as an equal at 6 percent, getting recognition also at 6 percent, being allowed to vote on workplace actions such as policy changes at 5 percent, and having autonomy in their work at 4 percent. The following quote capture what some participants wrote:

> "…appreciation and bonuses on hard work makes one feel good and when someone stands against injustice and people stand united for him, that's democratic behavior. With equal opportunities to work and no one to hold you back and people recognize you because of your work, that's the way one feels happy and motivated."

A few of the participants, 4 percent, did indicate that democracy has had no effect in their work environments because they "…have had no experience with democracy in … past work environments."

Overall, the majority of participants indicated that the concepts of democracy played and continues to play a key role in their productivity,

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motivation, innovation and happiness as well as their health in the workplace. The majority of responses to this question demonstrate how important democratic principles are within work environments to ensure that people stay happy, healthy, and productive, which aligns with the research conducted by the American Psychology Association and the National Institute for Occupational Safety and Health (as established under the 1970 Occupational Safety and Health Act) findings (discussed in chapter 2).

In the fifth qualitative question, "What situations have occurred in your current or past workplace that made you feel like you were treated unfairly, made you unhappy, and/or appeared to negatively affect your health or create greater stress for you and how do you think it could have been resolved?", nearly a quarter of the participants indicated that they had experience situations at work that made them feel they were treated unfairly. This include such things as being passed over for promotions, not being hired because of their religious beliefs, being paid less than a coworker doing the same work, and when a coworker or supervisor was given credit for their work. Some examples of these are included in the following statements:

> I applied for a position at my current workplace and after the deadline for responding to the application had passed and all candidates had been interviewed, the committee decided to respond to a late application and interview the person for the position. I felt that this was a very unfair practice (as well as poor professionalism shown by the candidate) and it created much frustration for me.
>
> When I found out new teachers were getting a beginning salary that was higher than my salary after 7 years of teaching. Pay raises would have been the simple solution.

Another quarter of participants felt that when their work environment was autocratic or contained despotism such as when "Rules [where] imposed without explanation or an obvious rational reason" or in the fact that "I do not like it when a boss or manager introduces new polices or rules without explaining the reasoning behind them. I want to be a part of the team and have ownership over why we do the things we do. I think employers need to trust their workers with information on not just how we do things, but why." These situations made many of the participants feel unhappy which in turn affects their health and productivity as indicated in the statement below:

> Typically greater stress is involved when your boss is breathing down your neck, forcing you to meet deadlines or impositions that are forced upon you. I am most unhappy when I am forced to follow a set path and just feel like a cog in the machine, with no brain of my own and no say in what I am doing, and no idea what my actual contributions might be.

Condition that make participants feel that they were treated unfairly, made them unhappy or had a negative impact on their health as described by many of the participants in their responses to qualitative question number five, including the 9 percent who experienced unclear expectations or worse, unrealistic expectations. These situations are actually identified in the National Institute for Occupational Safety and Health report on stress in the workplace as discussed in chapter 2 (costing the United States over $500,000,000,000 a year and countless lives related to illnesses such as cardiovascular disease and cancer). Overall, all but 6 percent of the respondents identified situations that they felt were unfair, made them unhappy or had a negative impact on their health.

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In the sixth and final qualitative question, "What concepts of democracy do you think can be implemented in a home environment and what do you think the impact might be on the members of the household?", a large portion of participants at over 20 percent indicated that they felt that having open communications is an important democratic concept to have in the home based on such statements as:

> Everyone in the house, even the children, should have a voice in family decisions. A discussion of where to eat dinner or what movie to rent can include even the youngest members of the household. In this way, everyone is empowered to give their voice and express their desires.

> Be good listeners; spend quality time with each other; educate to create strong ethical foundation so that family members can make their own decisions.

> Give everyone a chance to speak. It is simple, but if each person is given the opportunity to have his/her voice heard in family matters, then they will probably feel more like a part of the family

More than 15 percent of the respondents indicated that equality is important related to the way family members are treated and respected as equals in statements that indicate "That there is no hierarchy in a household [and] everyone's views are equal" and that "The idea of equal say and power - I know of many households where the woman is still subservient to the man and equal power and voice in all decisions would be more democratic." Respondents indicated that even children need to be treated equally as a family member with shared decision making (10%) and responsibility (9%).

Voting (10%) was also discussed as a family activity where "The right to vote for activities, rewards, dinner etc. … could create a happier household" and that "…it will increase the bond between family members if everyone feels they are being heard" through the voting process.

Participants also indicated that respect (8%) is an important part of the home environment where "Each individual in the home should respect others' opinions and privacy and in return receive the same treatment" and where "Parents … allow children to experience democracy in the home and learn the process of how it works" to provide a democratic education (7%).

Though most of the participants felt that democratic concepts can be implemented in home environments and have a positive impact on the members of the household, there were several participants, 2 percent, who felt that families should be subject to autocratic rules where parents, and in one case a specific parent, a patriarchy, should exist in the home such as where "Parents need autocracy to guide their children…Children need discipline to create self-regulation that feeds into a cycle of their own motivation." Though this view represents a very small percentage (2%) of the participants' views, it is important to consider that what we teach our children is often what they learn to become, the question becomes what do we want our children to become, democratic shared leaders where everyone is allowed to provide input and participate in decision making, or do we want them to become autocratic leaders who feel their say should be the final word in all decision making? The choice is ours in our homes and with our family members on how we want to impact our future society.

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The qualitative questions provided a great deal of insight into how the participants not only feel about democracy in the workplace and at home, but how various aspects of democracy, the principles of democracy, and the absence of democracy has impacted their lives. The immense amount of information and examples provided by the participants helps to tell the story of how democracy in various lived environments effects the freedom, liberty, and justice we find in our everyday lives and how it can actually work to provide benefits to our families and society as a whole. The responses are invaluable to future research on how to implement democracy and democratic principles in more effective and meaningful ways in work and home environments and to make it part of everyone's lived experiences in the future.

Quantitative Analysis

The quantitative questions focused on measuring how knowledgeable and experience of each participant related to democracy, democracy in the workplace, and democracy in the home, and explored how participants felt about the importance of the principles of democracy and if democracy versus non-democratic work and home environments effected a person health, happiness and productivity. Overall, the results of the quantitative responses appears to indicated that the majority of the participants view democracy in the workplace and home as an important contributor to a person's health and productivity and that everyone in both work and home environments should be treated fairly and with respect as many of the participants indicated they felt that stress in the workplace can effect a person's health.

Table 4 provides the percentages of participants who selected the specific rating category from 1 to 5 (where 1 indicates they Strongly Disagree, 2 indicates they Disagree, 3 indicates they neither Disagree or Agree, 4 indicates they Agree and 5 indicates they Strongly Agree) for each of the quantitative research questions. An interesting aspect of how the participants viewed the principles of democracy as being important in a democracy is that Justice was rated the highest and that Happiness was rated the lowest. So the question is, should we seek justice more highly in a democracy than happiness or is the pursuit of happiness a result of seeking justice?

Table 4
Percent of Participants Responses by Quantitative Questions Ratings

#	Question	1	2	3	4	5
1	I have a good understanding of what democracy means.	3%	2%	14%	47%	34%
2	Individual rights are important in a democracy.	3%	2%	5%	36%	54%
3	Freedom is important in a democracy.	3%	3%	6%	38%	50%
4	Liberty is important in a democracy.	3%	2%	8%	37%	50%
5	Justice is important in a democracy.	3%	2%	2%	28%	65%
6	Equality is important in a democracy.	3%	2%	7%	26%	62%
7	Happiness is an important consideration in a democracy.	3%	13%	27%	33%	24%
8	Participation is required in a democracy.	5%	6%	4%	23%	62%
9	Democracy should be a way of life.	4%	6%	21%	36%	33%
10	Democracy should exist in the workplace.	3%	7%	20%	40%	30%
11	Democracy should exist in the home.	5%	7%	20%	32%	36%
12	Stress in the workplace can affect an employee's health.	3%	1%	4%	15%	77%
13	Democracy in the workplace can improve an employee's health.	3%	3%	27%	39%	28%
14	Democracy in the workplace can improve an employee's productivity.	2%	4%	16%	40%	38%
15	Everyone in the home should be treated fairly and with respect.	4%	1%	3%	13%	79%
16	Everyone in the workplace should be treated fairly and with respect.	3%	1%	2%	13%	81%
17	Everyone in the workplace should be able to participate in decisions that affect their work and pay.	3%	9%	18%	35%	35%
18	Non-democratic home environments can create unhealthy relationships.	5%	10%	22%	27%	36%
19	Non-democratic work environments can create unhealthy relationships.	4%	9%	21%	33%	33%
20	My current work environment is democratic.	5%	16%	32%	32%	15%
21	My current home environment is democratic.	2%	11%	12%	30%	45%
22	My current work environment is a healthy environment.	7%	9%	18%	35%	31%
23	My current home environment is a healthy environment.	2%	5%	7%	34%	52%
24	My current work environment allows me to be productive.	4%	7%	16%	40%	33%
25	My current work environment allows me to be innovative.	5%	8%	22%	35%	30%
26	My current work environment motivates me.	6%	9%	25%	33%	27%
27	My current work environment allows me to participate in decisions that affect my work and pay.	12%	16%	30%	30%	12%
28	I am happy in my current work environment.	5%	9%	21%	38%	27%
29	I am happy in my current home environment.	4%	4%	6%	29%	57%
30	I am treated fairly and happy in my current work environment.	5%	9%	15%	36%	35%
31	I am treated fairly and happy in my current home environment.	3%	4%	4%	30%	59%
32	More democratic home environments can improve a family's health.	4%	3%	19%	34%	40%

Quantitative Question #1

In the first quantitative question, "I have a good understanding of what democracy means", over 81% Agreed or Strongly Agreed that they had a good understanding of what democracy means. This question is important to gaining an understanding of how many of the participants were comfortable with their understanding of democracy. Figure 25 provides a chart showing the distribution of ratings the participants felt related to their understanding of what democracy means. What is interesting is when comparing this quantitative question with the qualitative questions related to democracy, there were very different views from each of the participants as to what democracy means.
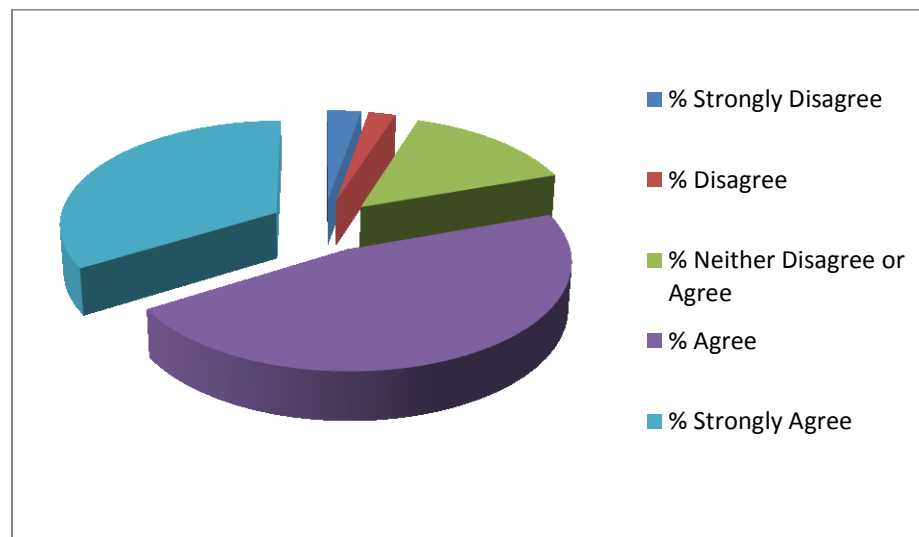

Figure 25: Chart of Percent Rating - Quantitative Question #1

There were seven quantitative questions that were related to the importance of various democratic principles in a democracy. The second quantitative question, "Individual rights are important in a democracy", shows that the majority of participants, at 90%, agreed or strongly agreed that individual rights are important to a democracy. Though individual rights was rated one of the most important principles in a democracy, justice (Quantitative Question #5) was rated the highest by the participants with 93% of the participants agreeing or strongly agreeing that justice is important in a democracy. Note the comparative distributions of the participant's ratings of importance for each of the principles of democracy in Figures 26 – 32. These questions provide valuable insight into how important each of the principles of democracy is to the research participants.

Figure 26: Chart of Percent Ratings for the Importance of Individual Rights in a Democracy - Quantitative Question #2

Figure 27: Chart of Percent Ratings for the Importance of Freedom in a Democracy - Quantitative Question #3

Figure 28: Chart of Percent Ratings for the Importance of Liberty in a Democracy - Quantitative Question #4

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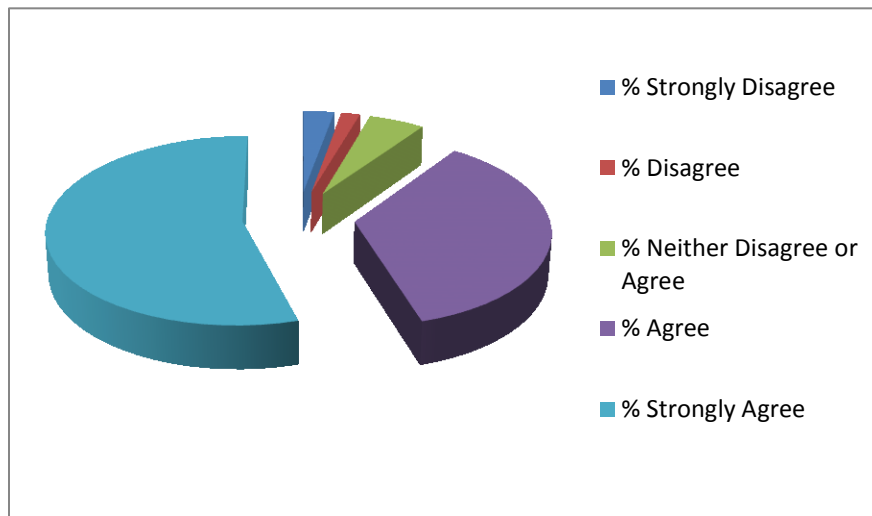Figure 29: Chart of Percent Ratings for the Importance of Justice in a Democracy - Quantitative Question #5
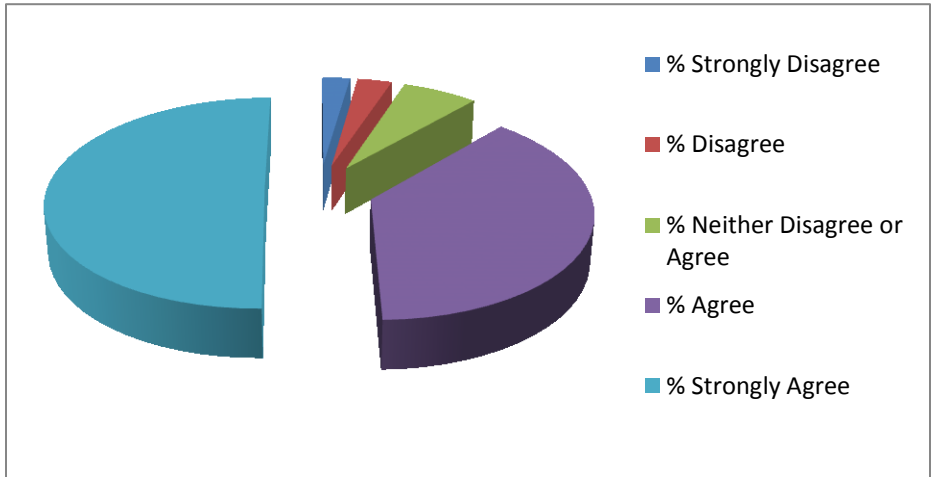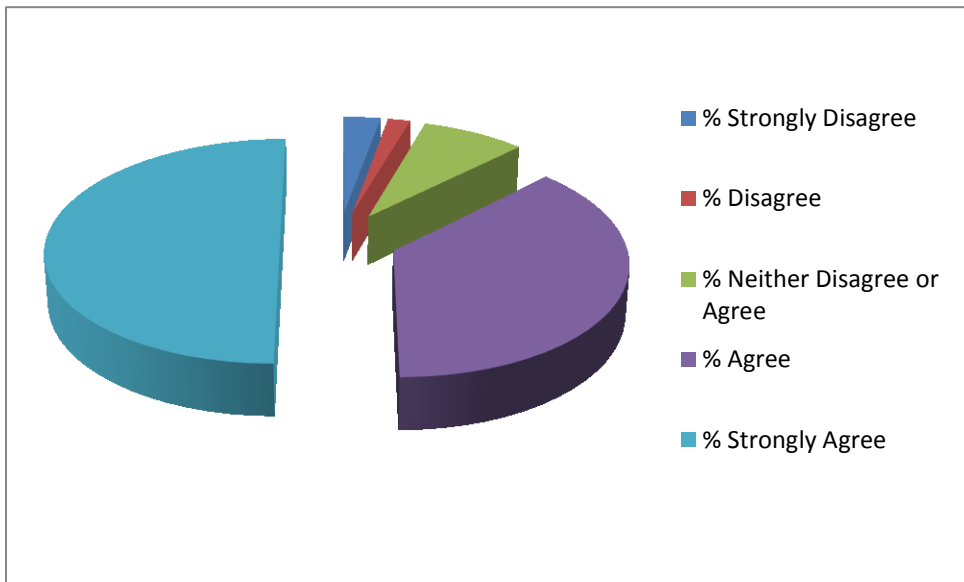

Figure 30: Chart of Percent Ratings for the Importance of Equality in a Democracy - Quantitative Question #6
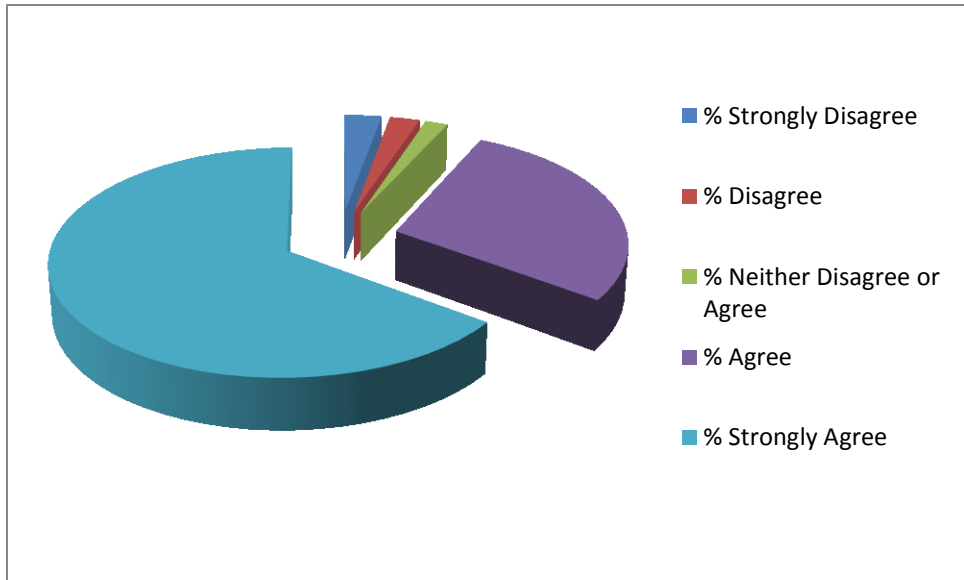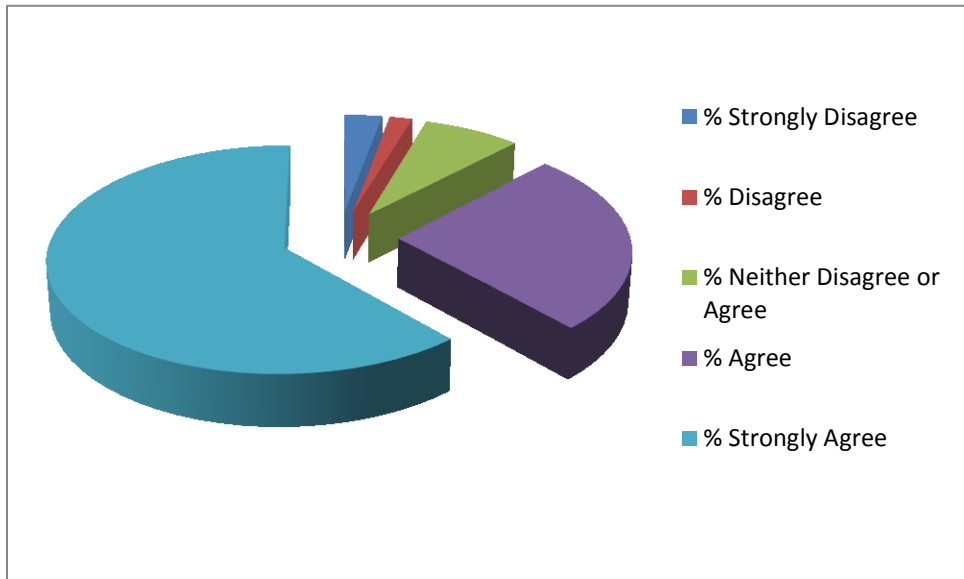
Figure 31: Chart of Percent Ratings for the Importance of Happiness in a Democracy - Quantitative Question #7
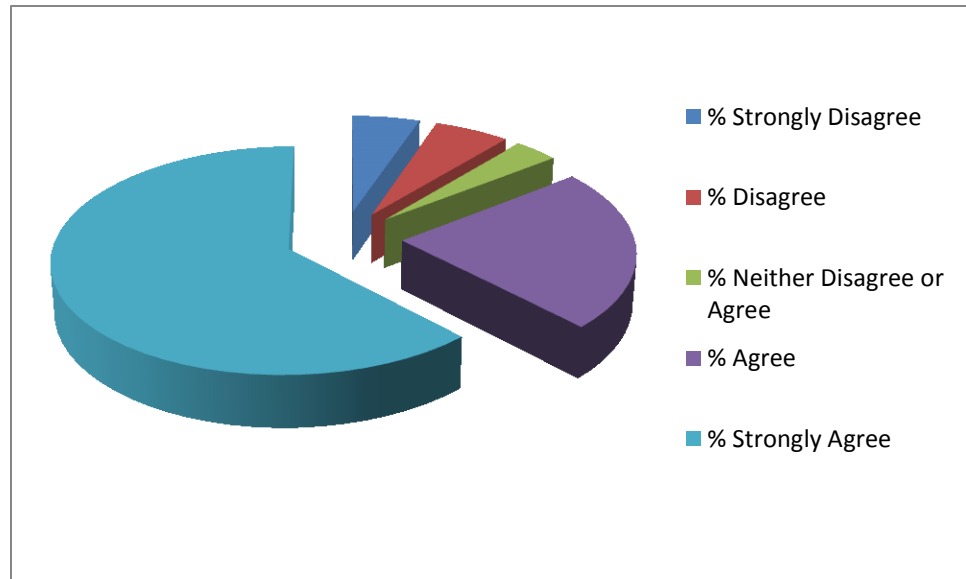
Figure 32: Chart of Percent Ratings for the Importance of Participation in a Democracy - Quantitative Question #8

There are three quantitative questions related to where democracy should exist, in all aspects of life as a way of life, in work environments, and in home environments. Figures 33 through 35 provide the distribution of participants ratings as to whether democracy should exist as a way of life, in the workplace, and in the home. In comparing the distribution between these qualitative questions the of participants who agree or strongly agree that democracy should exist in the workplace, 70%, was comparable to the feeling that democracy should be a way of life, 69%. It is interesting that 68% of the participants felt that democracy should exist in the home after reviewing their qualitative answers related to democracy where many did not appear to support the concepts of democracy in the home. The participants may have changed their views by going through the qualitative questions and reflecting on what they learned through the research and their qualitative answers.
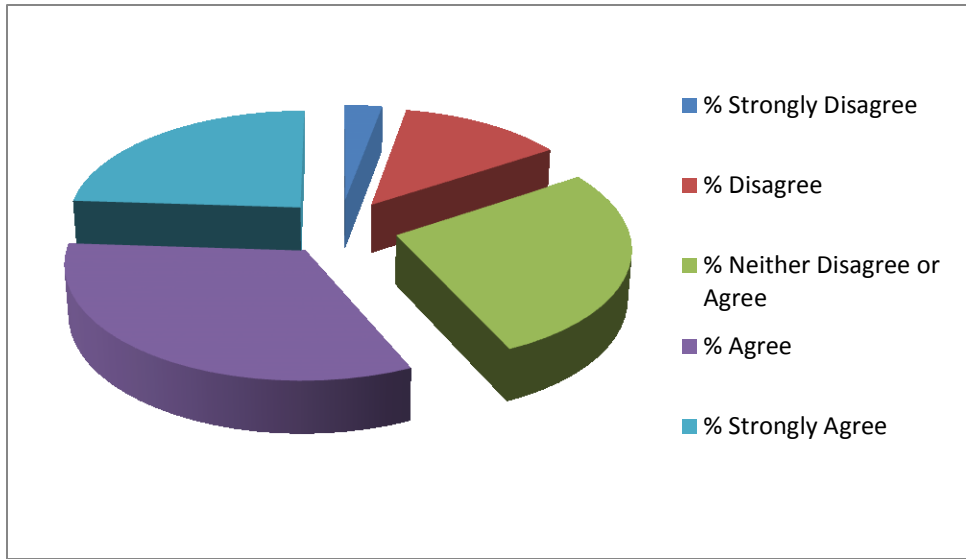

Figure 33: Chart of Percent Ratings for the Importance of Democracy as a way of life - Quantitative Question #9
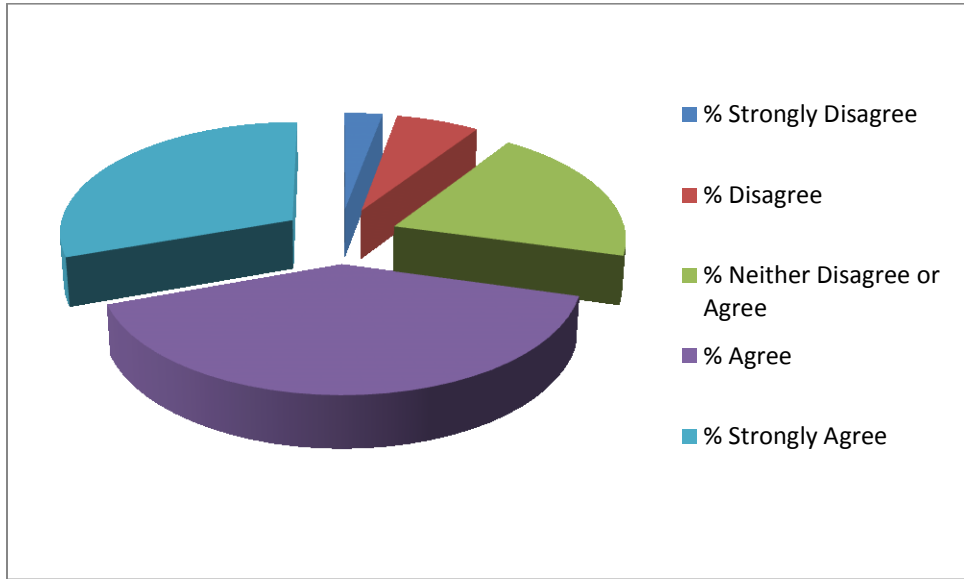
Figure 34: Chart of Percent Ratings for the Importance of Democracy in the Workplace - Quantitative Question #10

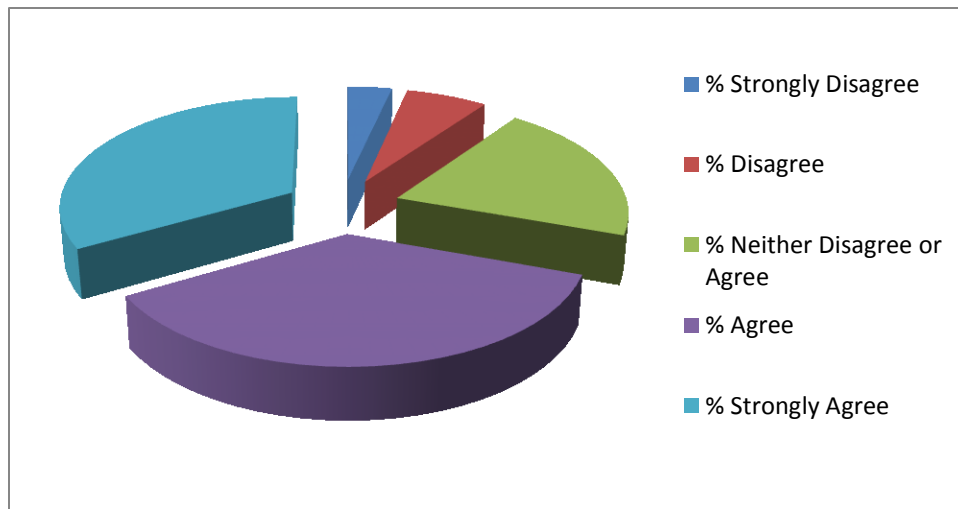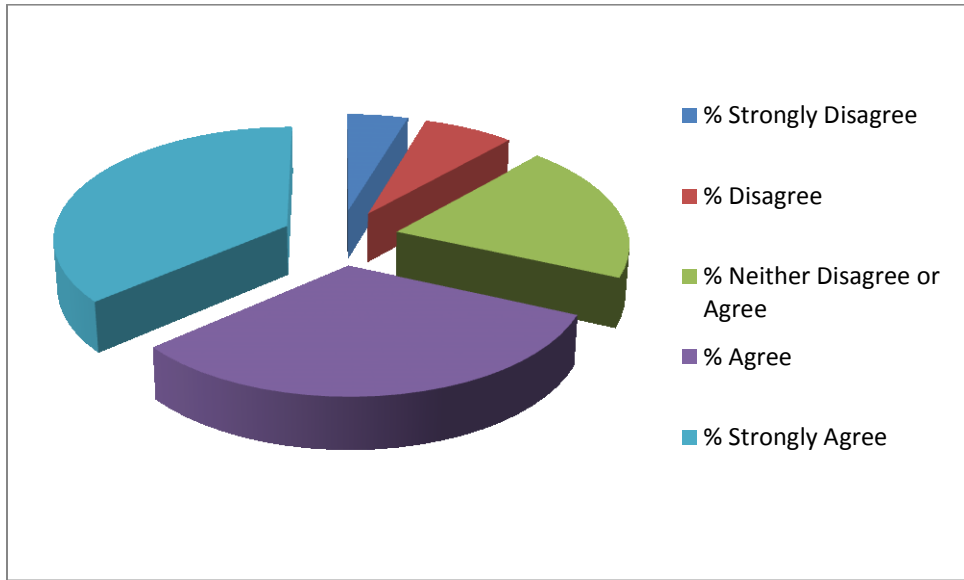Figure 35: Chart of Percent Ratings for the Importance of Democracy in the Home - Quantitative Question #11

<u>Quantitative Questions #12 & #13</u>

The quantitative question related to the impact of stress in the workplace on an employee's health provides an important correlation to democratic principles as defined in the National Institute of Occupational Safety and Health, the research arm of the 1970 Occupational Safety and Health Act (OSHA). The question on stress in the workplace affecting an employee's health was had one of the highest strongly agree ratings of all the questions with 77% of the participants strongly agreeing that stress impacts health. This is an important finding when we consider the objectives of the research that included determining if participants' recognized that stress impacts the health of individuals within various lived environments. It is understandable though that in quantitative question 13, there are lower ratings related to democracy in the workplace improving an employee's health since many participants have differing views on what democracy in the workplace is or if it can even exist.

Though the participants in the research did not appear to make as high a correlation between the impact of stress on an employee's health as they did on democracy improving an employee's health in the workplace, this could be because only a small number of participants actually went into the research pages; thus many did not pick up on the relationship between stress and non-democratic work environments. Therefore, it appears that there needs to be more incentive for participants to reference the research pages. See Figures 36 and 37 for a comparison of the distribution of participant responses to these questions.
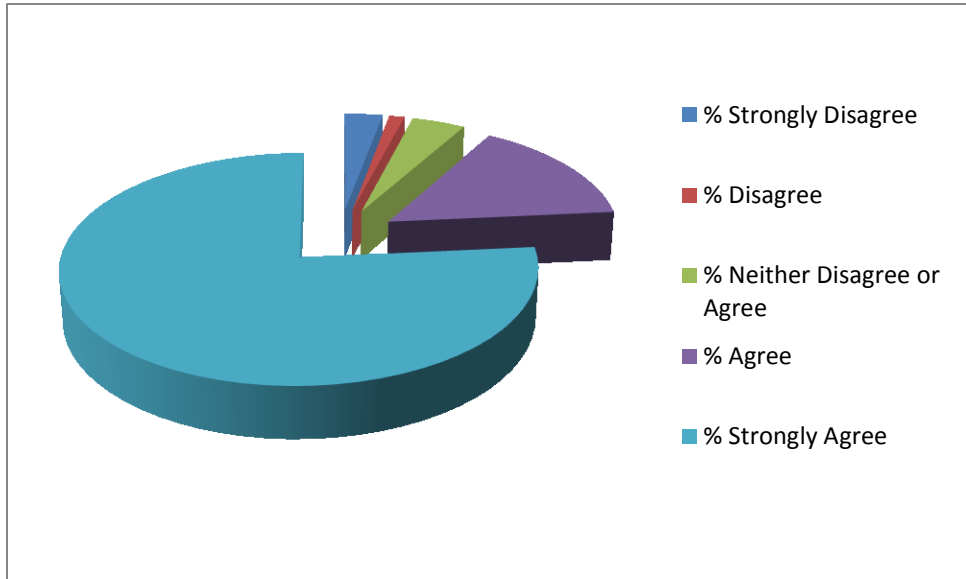
Figure 36: Chart of Percent Ratings related to the Impact of Stress on Employee's Health - Quantitative Question #12
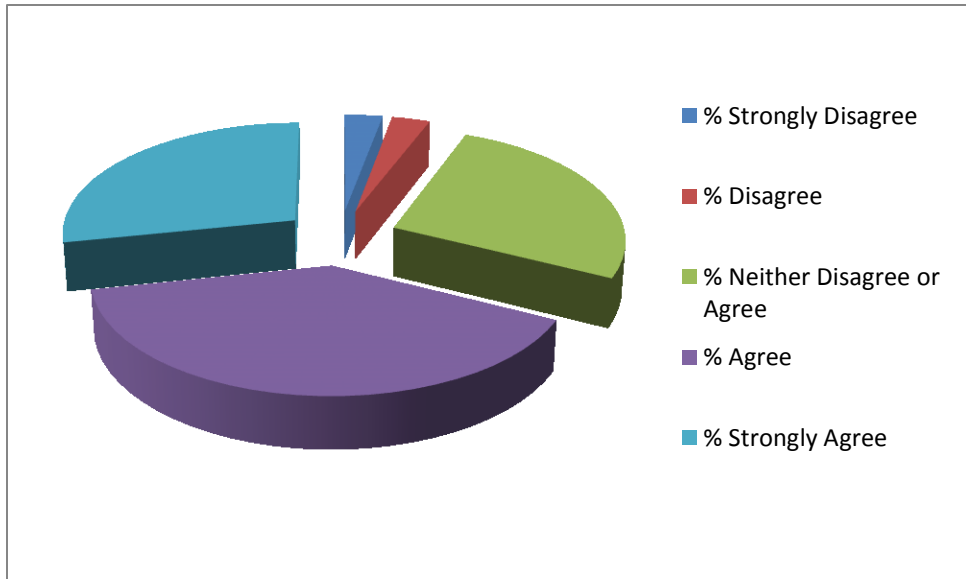
Figure 37: Chart of Percent Ratings related to Democracy in the Workplace Improving an Employee's Health - Quantitative Question #13

The quantitative question related to improving an employee's productivity is another key question in analyzing the hypothesis of this research. Based on the participants rating of the question, it appears that a majority of them, 78%, agree and strongly agree that democracy in the workplace can improve an employee's productivity. Figure 38 presents a chart of the distribution of the percent of participants that chose the specific categories in the quantitative ratings. Between the relatively high percentage of participants that agree with both quantitative questions 13 and 14, the underlying hypothesis of this research appears to be supported by the research participants.
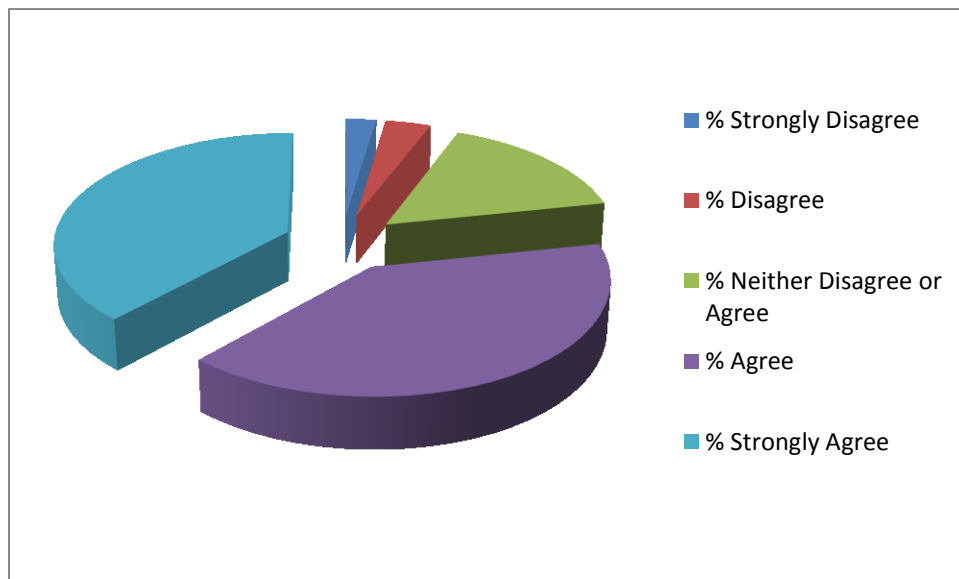
Figure 38: Chart of Percent Ratings related to Democracy in the Workplace Improving an Employee's Productivity - Quantitative Question #14

<u>Quantitative Questions #15 & #16</u>

When asked if everyone in the home and workplace should be treated fairly and with respect, a very high percentage of participants indicated that they strongly agree, 79% for fair and respectful treatment in the home and 81% for fair and respectful treatment in the workplace. These two quantitative questions had the highest number of participants strongly agreeing that everyone should be treated with fairness and respect, two concepts tightly founded in justice which in turn is a founding principle in a democracy. Fairness is often viewed as ones measure justice and respect is an extremely important construct within the implementation of democratic laws. Figures 39 and 40 presents charts of the distribution of the participant's ratings for quantitative questions 15 & 16.

These two quantitative questions were very important in using a different wording approach to measure the importance of democracy in the workplace and at home. As we can see from the survey results among the high rating that even though participants did not rate democracy in the workplace very high, they rated these two concepts as extremely high (strongly agree) for both the workplace and home.
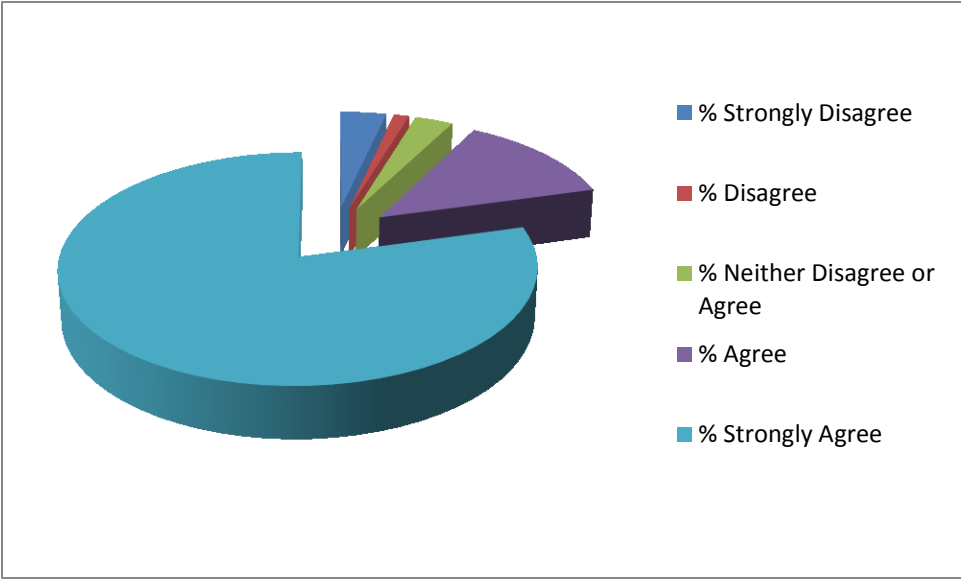
Figure 39: Chart of Percent Ratings related to Treating Everyone
Fairly and with Respect in the Home - Quantitative Question #15
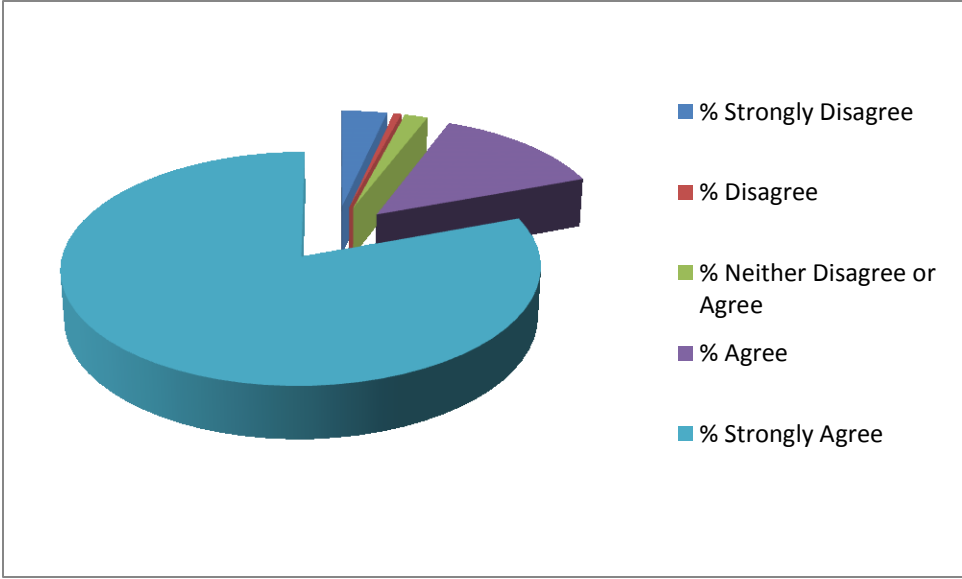
Figure 40: Chart of Percent Ratings related to Treating Everyone
Fairly and with Respect in the Workplace - Quantitative Question #16

The response to the quantitative question concerning decision making in the workplace were a little puzzling given the other responses to questions about participation and some of the answers to the qualitative questions. Though the majority of participants agreed or strongly agreed, 70%, there were a large number that did not agree or disagree, 18%, and this appears in a number of democracy in the workplace questions, see Figure 41 for chart of participant's rankings. This is an important discovery which indicates that many participants are not aware of their workplace rights. Further troubling is that, many of them did not visit the research pages to gain better insight on the meaning of workplace democracy. This discovery provides important insight into how the education on rights should be addressed in future studies on the workplace.
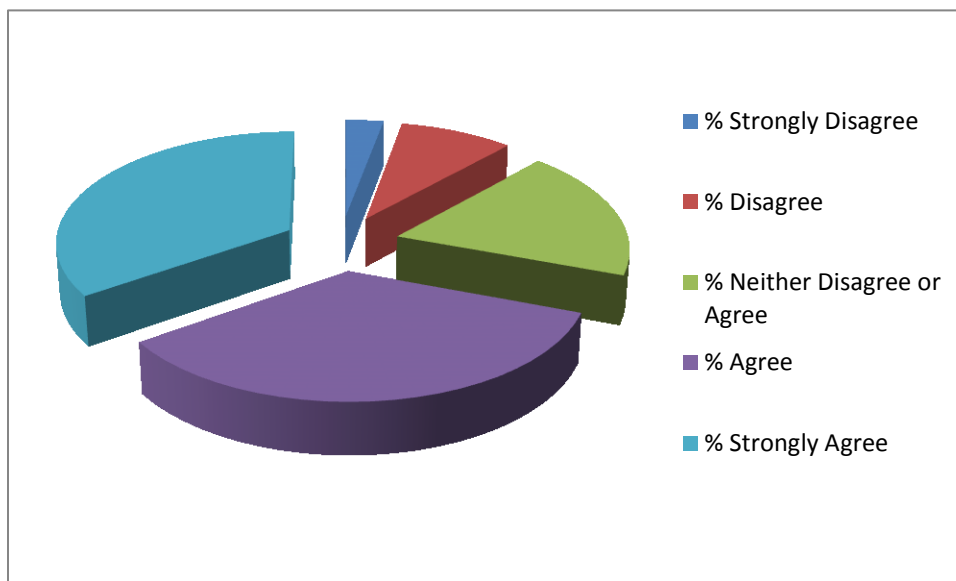
Figure 41: Chart of Percent Ratings related to Participation in the Workplace - Quantitative Question #17

<u>Quantitative Questions #18 & #19</u>

Quantitative research questions 18 & 19, related to the impact of non-democratic work and home environments on the health of relationships within these environments, shows again some hesitation by a number of participants in that over 20% indicated that they neither agree or disagree with the impact of non-democratic home and work environments on the health of relationships. Again, some of this hesitation may be coming from a lack of education related to what democracy in work and home environments means when contrasted with participant's answers to quantitative questions 15 & 16.

Though there were a larger number of participants who were undecided, there were still a majority, 63-66%, who felt that non-democratic home and work environments can create unhealthy relationships which supports the hypothesis of this research. These two quantitative questions looked at the impact of non-democratic home and work environments versus looking at the impact of democratic home and work environments to verify the reverse effect within the participant's ratings of the quantitative questions.   Figures 42 and 43 provide charts showing the distribution of the research participant's ratings for quantitative questions 18 & 19.

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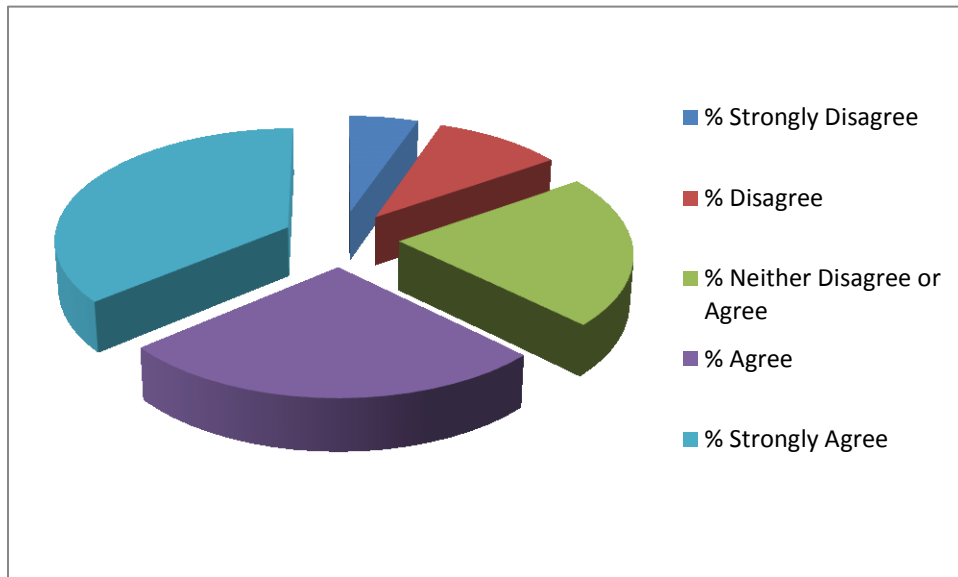
Figure 42: Chart of Percent Ratings related to the Impact of Non-democratic Home environments on Relationships - Quantitative Question #18
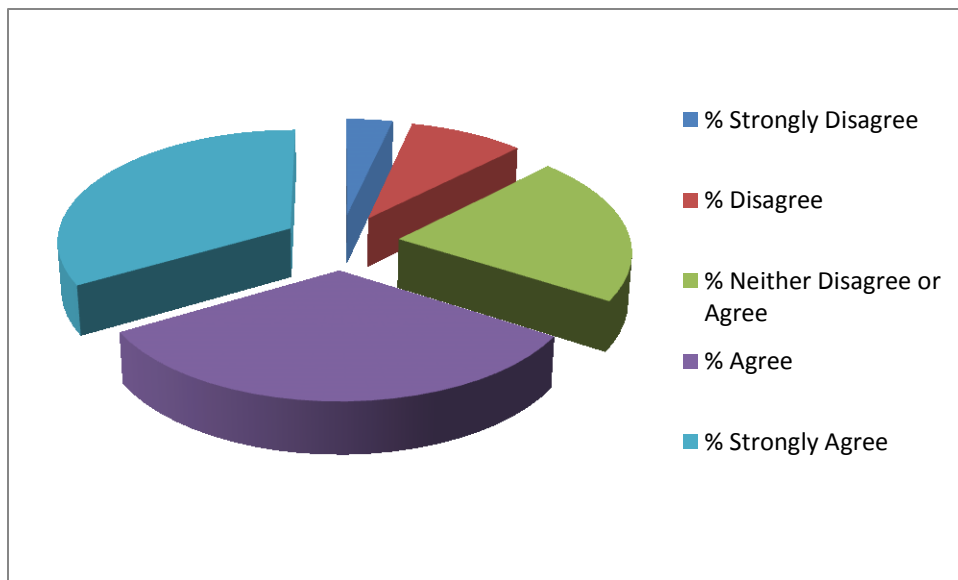
Figure 43: Chart of Percent Ratings related to the Impact of Non-democratic Work environments on Relationships - Quantitative Question #19

Quantitative Questions #20-21

Quantitative research questions 20 through 21 paint a picture of the participant's current work and home environments related to democracy. In review of these two quantitative questions there is a clear defining difference between the participant's current work versus home environment related to how democratic they are as pointed out in questions 20 & 21, see Figures 44 and 45 for the charts showing the distribution of participant's ratings for these two questions.

In these quantitative questions it appears that more participants feel that their current home environments are more democratic than their work environments. This is a very important distinction within the various lived environments where participants feel they have more democratic (empowerment of the people) power in their home environments and that they feel they lose this power within work environments. This issue is a major objective that this research hopes to point out and make people aware that democracy is important in all aspects of our social lives, especially in the two lived environments where we spend most of our time, our work and home environments.
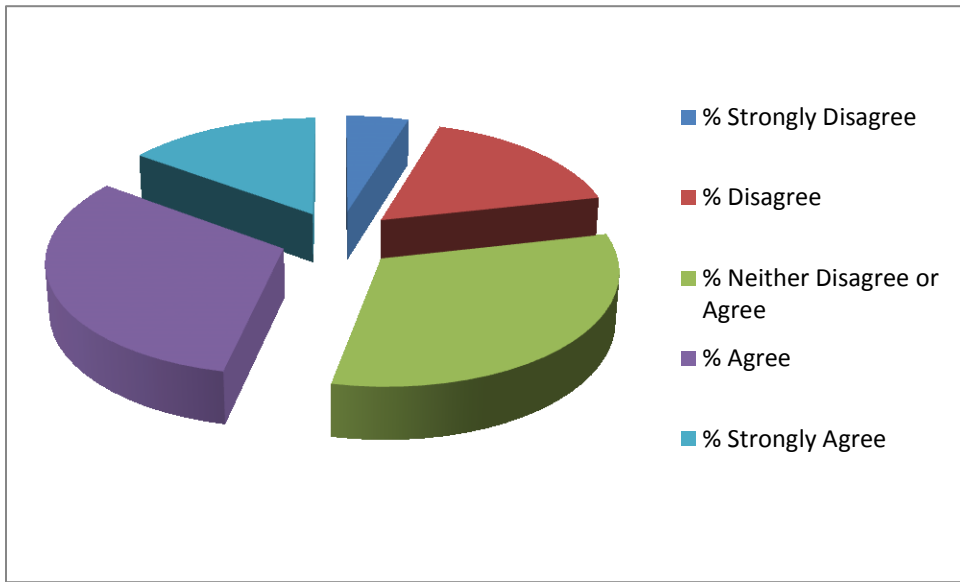
Figure 44: Chart of Percent Ratings related how Democratic their Work environments are currently - Quantitative Question #20
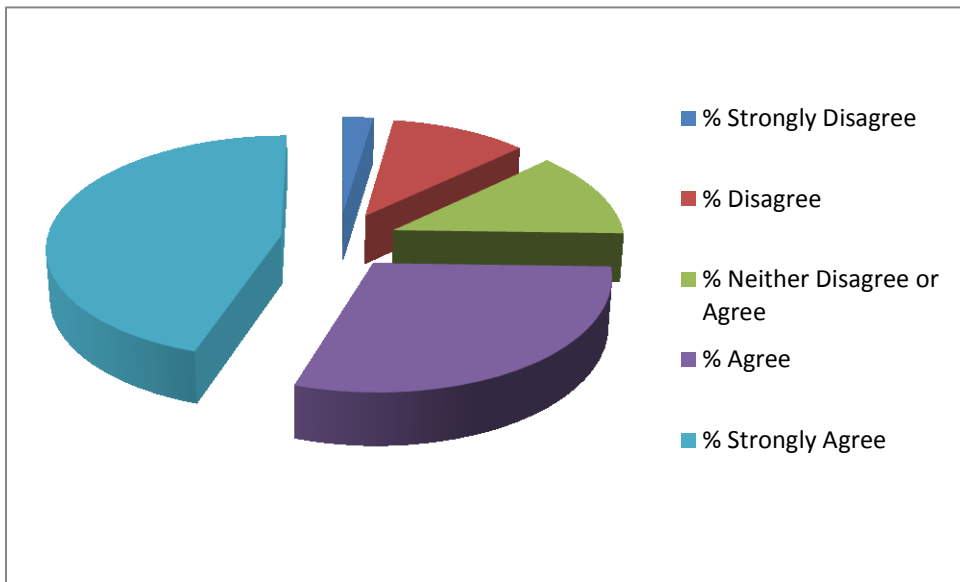
Figure 45: Chart of Percent Ratings related how Democratic their Home environments are currently - Quantitative Question #21

Quantitative Questions #22-23

Similar to quantitative questions 20 and 21, quantitative questions 22 and 23 show that the participants feel their home environments are healthier than their work environments. This indicates that since their home environments were more democratic than their work environments and their home environments are healthier than their work environments that there may be further support for the hypothesis set forth in this research, that democratic environments provide healthier environments. In other words, the participants knowingly or unknowingly identify that a lived environment that is more democratic also appears to be healthier leading to a possible relationship between democracy and healthier environments.

A comparison of the participant's answers between democratic and healthier work environments and some of their comments in the qualitative research questions suggests that they may not always be aware of how democracy, or the underlying principles of democracy, affects their health and happiness. This is why this research is important in making people aware of these affects. Figures 46 and 47 provide charts showing the distribution of participant ratings between quantitative questions 22 and 23.
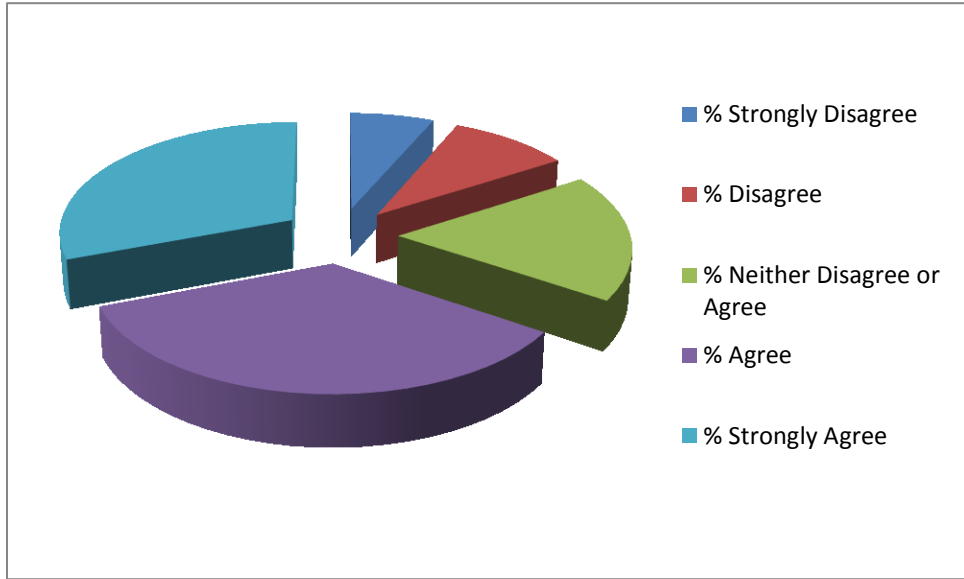
Figure 46: Chart of Percent Ratings on how Healthy Participants Work environments are currently - Quantitative Question #22
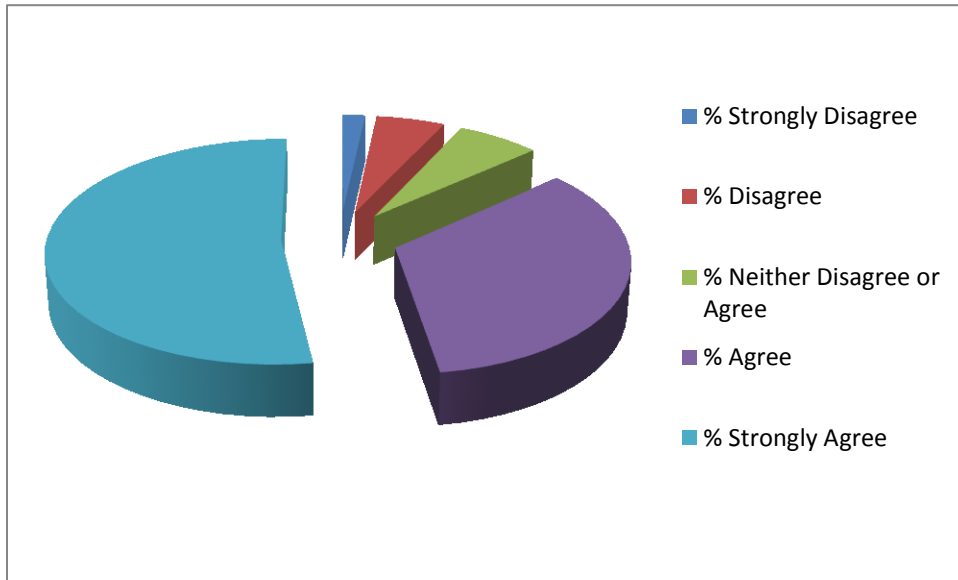
Figure 47: Chart of Percent Ratings on how Healthy Participants Home environments are currently - Quantitative Question #23

Quantitative research questions 24 through 27 related to how the participants feel about their current work environments as they relate to their productivity, innovation, motivation, and participation. Though a majority of participants, over 70%, felt that their current work environments allow them to be productive (quantitative question #24), innovative (quantitative question #25), and motivated (quantitative question #26), only 42% felt that their current work environment allows them to participate in decisions that affect their work and pay (quantitative question #27). There appears to be a disturbing disconnect between the effectiveness of employees at work and their ability to affect their own lives within these environments.

Figures 48 through 51 provide charts of the distribution of participant ratings related to how they feel about their current work environments as it relates to productivity, innovation, motivation, and participation. Of these different aspects of their current work environments, a large number of participants felt undecided as they neither agreed nor disagreed about whether their current work environments motivate them and this was further reflected in a higher number of participants who felt they were not allowed to participate in decisions that affect their work or pay. This is an issue I have seen over and over in work environments that violate federal laws related to employee rights in negotiations related to their work and pay.
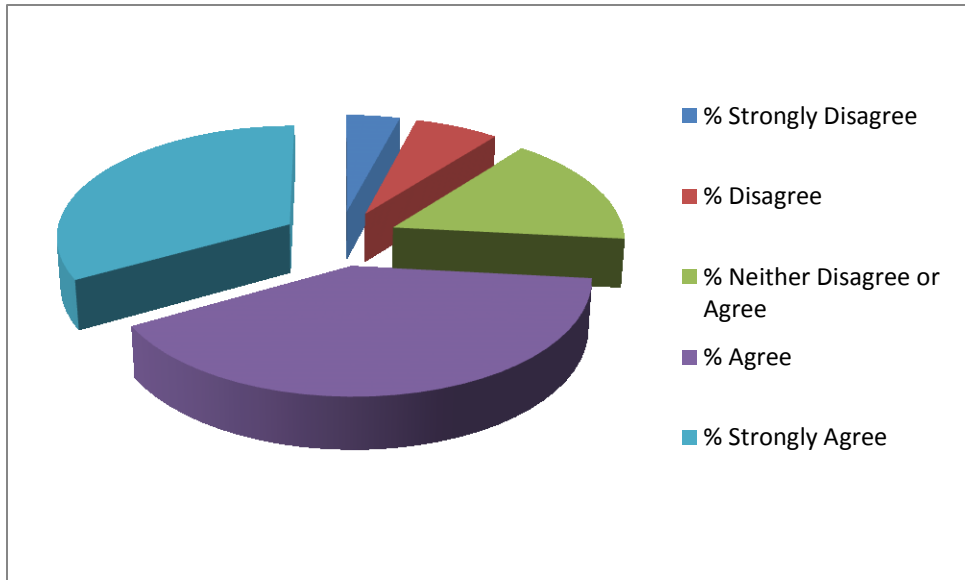
Figure 48: Chart of Percent Ratings on whether current Work environment allows productivity - Quantitative Question #24
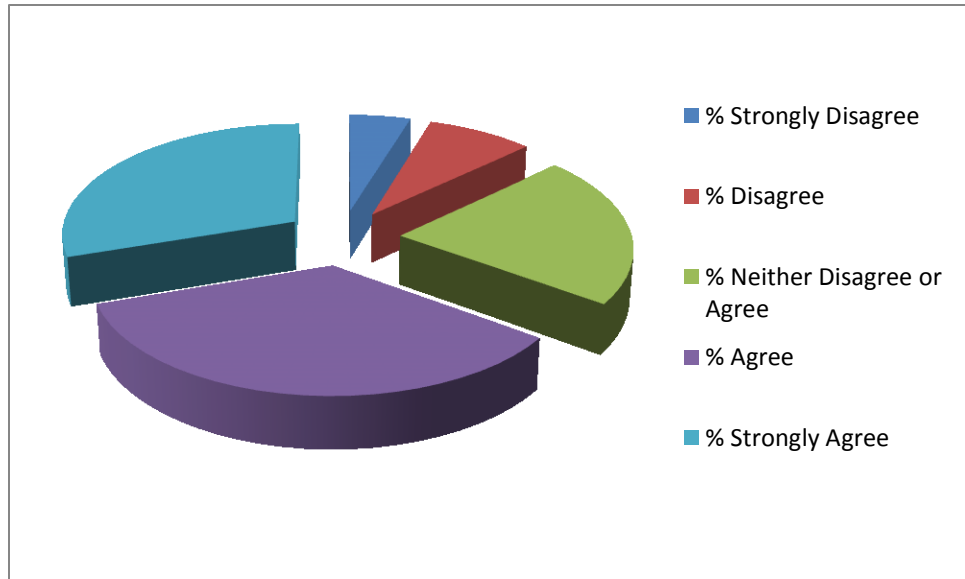
Figure 49: Chart of Percent Ratings on whether current Work environment allows innovation - Quantitative Question #25

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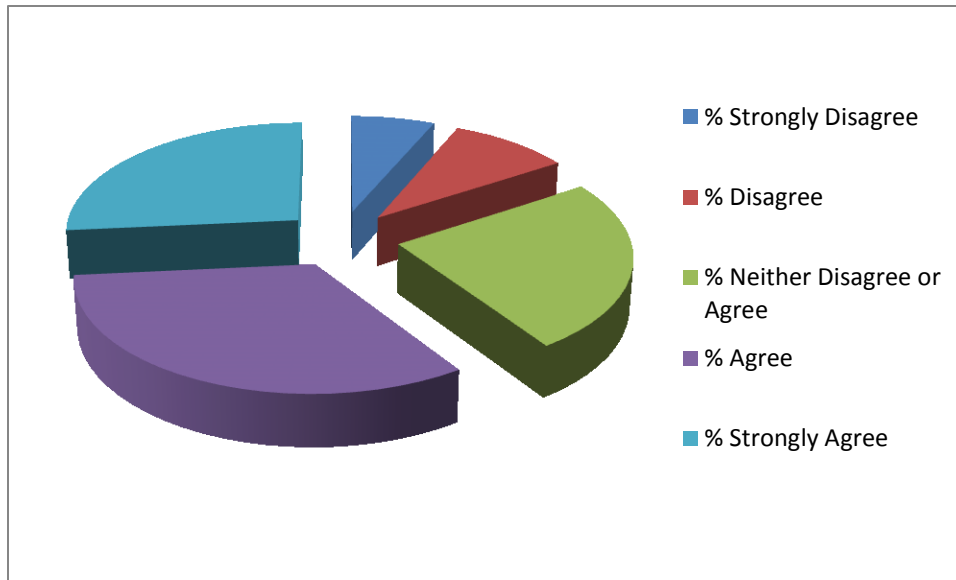
Figure 50: Chart of Percent Ratings on whether current Work environment is motivating - Quantitative Question #26
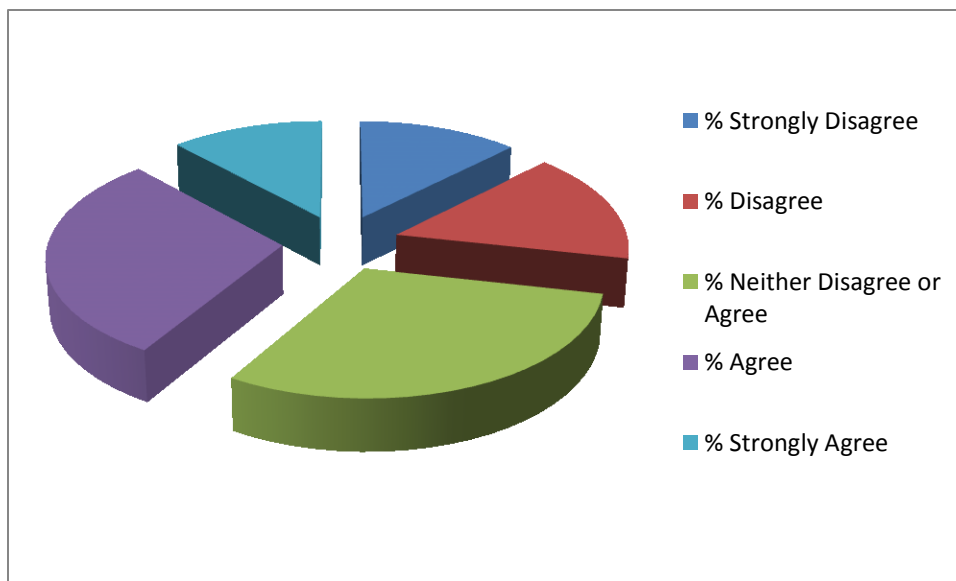
Figure 51: Chart of Percent Ratings on whether current Work environment allows participation - Quantitative Question #27

Quantitative questions 28 through 31 focuses on the participants'
happiness in their current work and home environments. The questions provide a
comparative contrast between happiness and justice as fairness by holding for
fairness between the two sets of questions. In comparing quantitative question 28
related to being happy in their current work environment with question 30 related
to being treated fairly and being happy in their current work environment, there is
a similar distribution of ratings from the participants. This may indicate that
being treated fairly and being happy are somewhat correlated as discussed earlier
in this section related to the overall rating analysis where fairness as justice was
correlated between several other quantitative questions in the research.

In comparing quantitative question 20 related to rating how democratic
the participants current work environment is, there are some similar distributions
of ratings when compared to question 28 related to how happy the participants are
in their current work environment and question 22 related to the healthiness of
their current work environments. This again may indicate that there is some
correlation between how democratic a work environment is and the relative effect
it has on a person's health and happiness.

Figures 52 through 55 provide charts showing the distribution of ratings
from research participants related to quantitative questions 28 through 31.
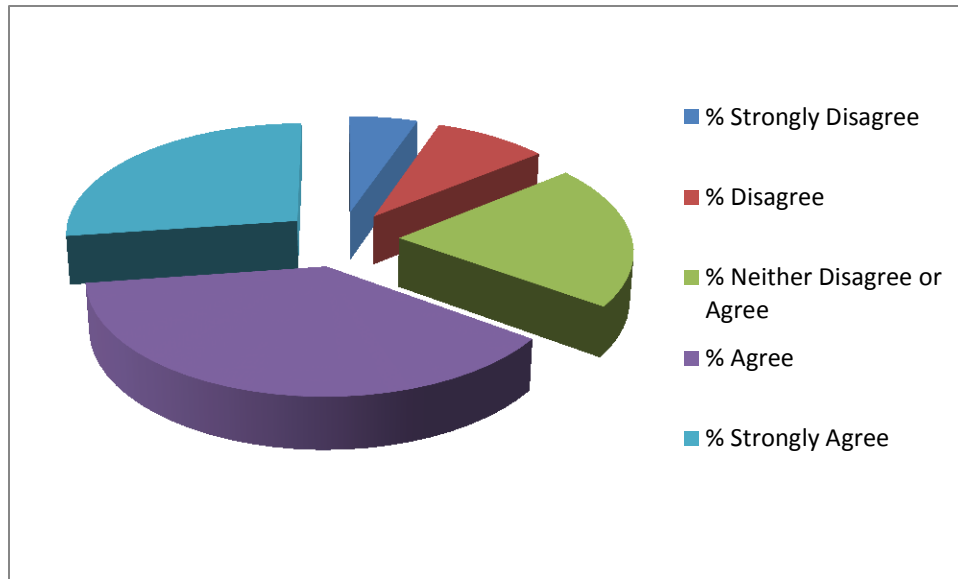
Figure 52: Chart of Percent Ratings on whether Participants are Happy in their current Work environments - Quantitative Question #28
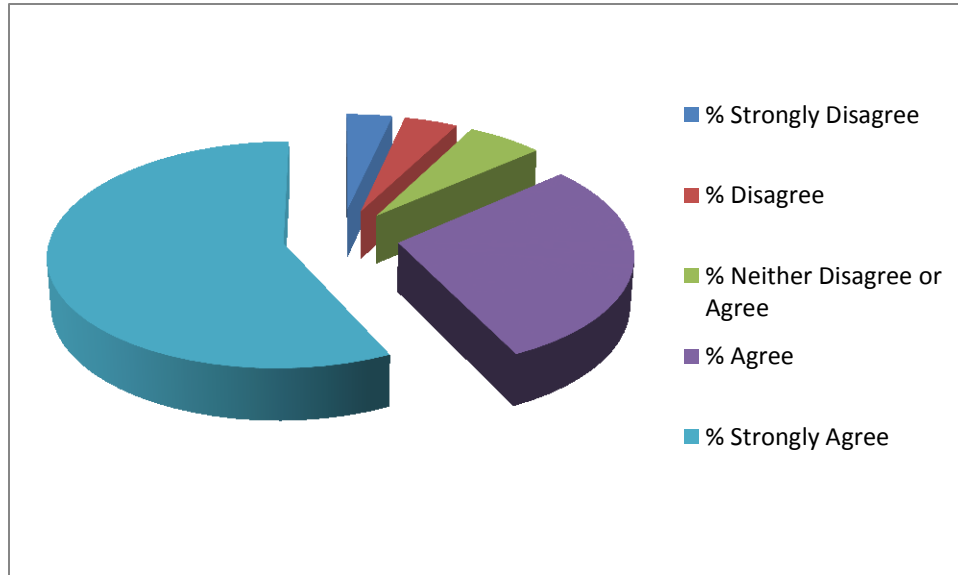
Figure 53: Chart of Percent Ratings on whether Participants are Happy in their current Home environments - Quantitative Question #29
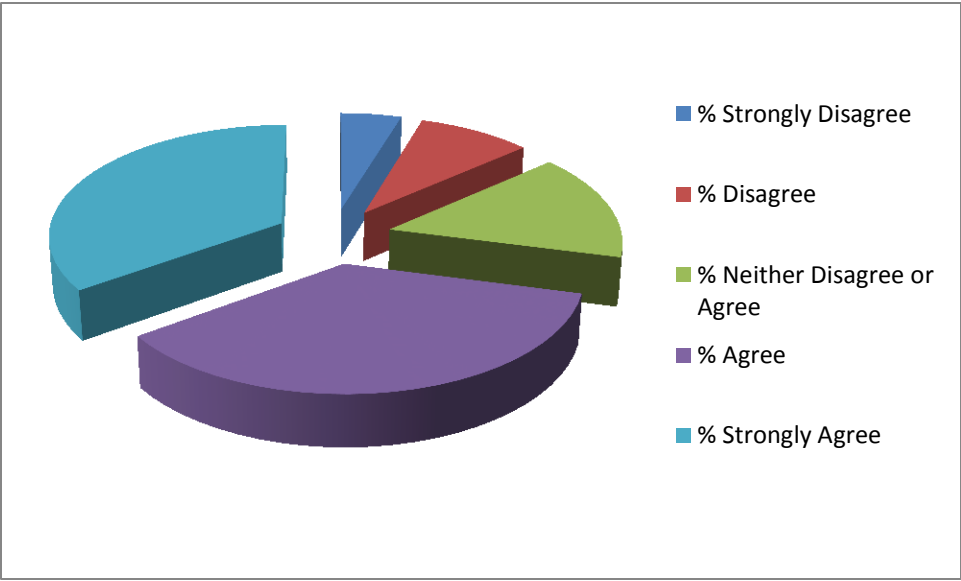
Figure 54: Chart of Percent Ratings on Fair Treatment and Happiness in current Work environment - Quantitative Question #30
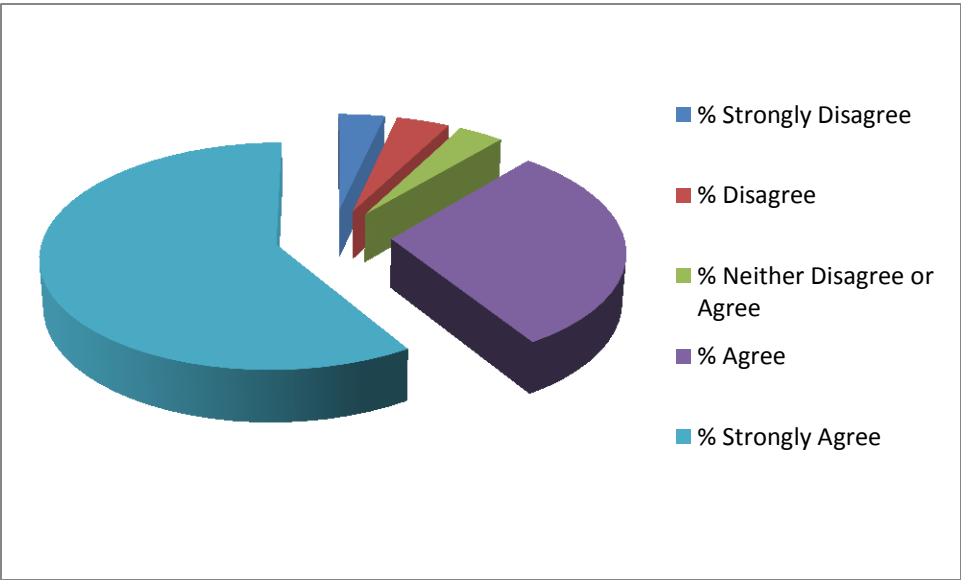
Figure 55: Chart of Percent Ratings on Fair Treatment and Happiness in current Home environment - Quantitative Question #31

<u>Quantitative Question #32</u>

The final quantitative question more directly addresses the effect of democracy on a family's health within the home environment. Though many of the participants rated their current home environment as democratic (quantitative question 21) and healthy (quantitative question 23), fewer participants indicated that a more democratic home environment can improve a family's health, a larger number were undecided and neither agreed nor disagreed. Even with this slight discrepancy between responses to questions, a majority of the participants, 74%, indicated that they agreed and strongly agreed that democratic home environments can improve a family's health, which is important in supporting the research hypothesis. Figure 56 provides a chart indicating the distribution of participant's ratings on the impact of democracy in the home on a family's health.
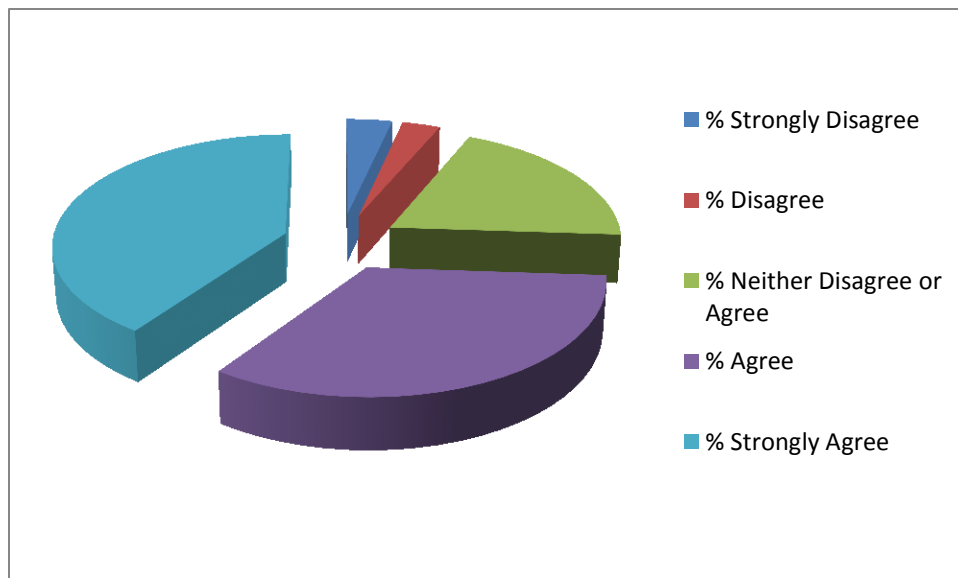
Figure 56: Chart of Percent Ratings on the Impact of Democracy in the Home on a Family's Health - Quantitative Question #32

Chapter 6

CONCLUSIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

COLLABORATION FOR DEMOCRACY

"The strongest democracies flourish from frequent and lively
debate, but they endure when people of every background and
belief find a way to set aside smaller differences in service of a
greater purpose." – Barack Obama, February 9, 2009

Conclusions

The qualitative and quantitative responses from the participants in this

research show that a majority of the respondents support the concepts of

democracy in the workplace and at home as having positive effects on the health

and productivity of individuals within these lived environments. A large number

of participants provided great examples of situations where democracy in the

workplace and home have provided healthier and more productive, motivating,

innovative, and creative lived environments.

Due to difficulties in expanding the research population during the

dissertation research effort as discussed in chapter 5, graduate students where

utilized as the research population which skewed the overall results toward a

highly educated survey population which affects the generalizability of the

research in relation to the general population. This provides an opportunity to

extend this research to a more representative sample of the general population in

the future to determine the extent of the gap that will need to be addressed to

create more healthy and productive democratic work and home environments.

The research also demonstrated how a gap exists between participants understanding of their rights within work and home environments and the legal democratic instruments established within published laws related to workplace and general human rights. This has also become very apparent when many of the people I have talked with including the graduate students in my classes about what "right to work" laws such as the Arizona constitution mean versus the actual words written within the laws where they are often misinterpreted.

Between the research support for democracy in the workplace and in the home and the clear gap between the understanding of the democratic laws and rights that exist demonstrates why it is so important to establish a mechanism that allows people to interact and update ethnographic related information about their lived environments to the laws and rights individuals can use to create less stressful and more democratic work and home environments (where stressful work environments cost the U.S. over $500,000,000 a year and countless lives as discussed in chapter 2).

The research tested a mechanism to address these issues, as discussed in chapter 3, involving a Virtual Ethnographic Research System Architecture (VERSA) prototype. This prototype provided some important insight into how to best capture and track participants input so that a clearer picture can be built through a longitudinal process of how participants learn and what information might be of greater benefit to them in their various situations.

The research demonstrated how a Virtual Ethnographic Research System Architecture can be used to effectively capture and track participants input and help participants improve their awareness of work and home environments that are non-democratic and how to improve these environments by introducing democratic principles. This information can then be combined with the various knowledge databases made available on legal, social, and health research within the system. This allows participants to learn more about creating healthier more productive work and home environments while providing them with a better understanding of their rights and duties within these lived environments.

Managing the Virtual Ethnographic Research System Architecture (VERSA) prototype surveys required a great deal of time, creating emails for the participants, following up on registrants who had not completed the survey, and analyzing participant qualitative responses. Based on the system design, these issues can be addressed through enhancements to the system similar to the automated notification system that was designed to send out initial logon emails to all registrants.

Though the VERSA prototype demonstrated the capability of allowing participants to provide input and changes over time to support a longitudinal type of study, it is also important that the system provide the ability to capture and track more dynamic aspect of participant input to provide a more ethnographic view of the participants lives including the integration of some of the advanced technologies discussed in chapter 3.

Given the capabilities of the VERSA prototype, an on-going longitudinal research study would be relatively easy to implement in a manner that was more efficient and effective than standard research techniques. The VERSA prototype proved that the system can handle both time constrained research efforts and the demands of longitudinal studies.

Providing this type of research system enables participants to better understand the various models of democracy (Held, 2006), which allow participants to begin a journey into creating more democratic, productive and healthy work environments. What better way to create a society where the people have the power to communicate effectively with one another enabling them to fully understand differences of opinions and to recognize that we may actually want the same things in life.

The ability of tracking changes within the VERSA prototype provides an opportunity to better understand when and why participants change their answers and their general learning paths related to demographic information. Tracking provided a greater depth of understanding about participants meaning of democracy and democratic principles in their various lived environments and how these environments impacted their health and productivity.

Research has shown that the most effective way to maintain and sustain educative and communicative learning processes is to provide dynamic and continuous learning systems that allow interaction with various levels of research on a daily basis, allowing participants to become more knowledgeable about how to support more democratic work and home environments as discuss in chapter 3.

As Shapiro indicated that "society has an obligation to develop in children the salable skills and capacities – human capital –" required for prevailing in economic and technological circumstances (Shapiro 1999, p. 87). Participants' responses supported this claim in chapter 5's qualitative analysis section.

Though the longitudinal aspect of the VERSA was not fully tested during the dissertation research, it became clear that as participants requested further clarification on different issues, the capabilities of the prototype allowed the participants to go back into the system and adjust their answers based on my follow up with them. These changes are tracked in the system so the system is able to analyze before and after answers, especially given the researcher interaction with them. By allowing participants to come back and change their answers, a story was built about their learning processes as the changes demonstrated how they built upon previous answers and extended their descriptive information to include additional examples of their experiences, observations, and education on the subject matter. This research method allows researchers to collect data to better understand participants' meanings.

Using advanced technologies enables researchers to paint a more completed picture of participant's lives through participants' documentation of their physical, cultural, social, and emotional environment in multi-dimensional displays built from pictures, descriptions, and videos submitted into the advanced VERSA by participants.

System Enhancement Recommendations

Early on in the participant use of the VERSA prototype it became clear that there was a system problem related to participants losing data due to timeout setting. Based on this issues, an important recommendation for enhancing the VERSA web application is to add an introductory page to the survey describing each page of the survey such as the qualitative page, quantitative page, and demographic page with a general estimate of the amount of time each page may take, noting that the qualitative page may take longer based on the length of ones answers. I would also provide a clear warning on the system timeout settings and remind the participants to save often.

Since this effort was only a prototype of a Virtual Ethnographic Research System Architecture, it is important that the benefits of the system be weighed in light of the on-going maintenance and support for such a system. Some of the major enhancements that will need to be dealt with include the data warehouse business intelligence types of functions as were discussed in chapter 3 related to advancements in technologies. These enhancements will need to be built into build the back end of the research system so that qualitative answers do not take so long to analyze, summarize and code. This is especially important when large numbers of participants are expected as just with the few hundred that participated in the VERSA prototype, over 960 qualitative responses were generated and had to be reviewed, analyzed, summarized, and coded based on each category of data. Having a clear understanding of data collection is important to the analysis processes and will be important to expanding the capabilities of the system.

Future Research Recommendations

Given the success of the VERSA prototype during this research effort, it is recommended that the prototype be expanded to include the designed back end processes to support technologically advanced Data Warehouse Business Intelligence functions related to those discussed in chapter 3 to enable the system to more effectively analyze large amounts of qualitative data which tended to be a little overwhelming in this research study using the prototype system.

It also became clear, given the wealth of qualitative information provided by the participants, that the results of this research can be used to formulate effective future research in developing more democratic, productive, innovative, motivating, healthy, and happy work and home environments by allowing this information to be shared and accumulated to create and maintain more democratic work and home environments that address the current workplace issues costing the United States over Five Hundred Billion Dollars a year and countless lives (Whetten and Cameron 2002; NIOSH, 1999; Miller and Smith, 1998).

This research provides a foundation for a future that provides healthier and happier work and home environments where people can be more active and productive in the social mechanisms that provide marked improvements for a society that saves billions of dollars and countless lives through shared understandings of how to lower workplace stress and help people to more effectively participate in democratic processes that allow them to find freedom, liberty, and justice in their lived environments.

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APPENDIX A

SYSTEM DESIGN

FOR

VIRTUAL ETHNOGRAPHIC RESEARCH SYSTEM ARCHITECTURE

(VERSA)

System Processes

The Virtual Ethnographic Research Mechanism will be based on a Web Client interface to a Server Database Application and will provide the following processes:

1. Participant Logon Screen with UserID and Password (which were sent to them via email with no identifying information for either the UserID or Password) Authentication (Provide warning about not entering any identifying information about themselves, reminding them the information will be kept confidential). The information required to follow up with Participants via email will be maintained on a separate computer in a secured database.

2. Participant summary report of past interaction with system for participant review and where they last left off in their interaction with the system.

3. Track Participant's activities and allow participants to interact with their past activities and research answers.

4. Allow participants to change prior answers to questions but keep track of the history of each of their prior answers and the date and time that they changed their answers relative to the learning paths the participant has taken prior to each related answer.

5. Allow participants to search for additional information related to the survey question while tracking the navigation path, time spent on each page, any interaction with the additional information and any additional research they did related to the question and if they changed any other questions based on their research (track their learning paths).

Web Application Functional Specifications

1. The Virtual Ethnographic Research Mechanism will be based on a Microsoft ASP.NET Web development environment that includes additional ADOBE Flex and Silverlight functionality as well as open source products that may assist in development of the research mechanism software.

2. The Web application will interface a Microsoft SQL Server database where all participant information will be encrypted to ensure security (Data Store #1 – Participant Logon Information).

3. The Web application will allow the participant to navigate back to the last known location within the system from the participant's previous session based on data stored in the database.

4. The Web application will allow the participants to navigate to a research database (Data Store #4) where they can learn more information related to the specific survey question they are currently on and do research on related subjects that are tracked in the Survey and Navigation Database (Data Store #3) which is in turn used to update the Participant Navigation History (Data Store #2) based on when the Participant started and ended their session and accessed each research node along the way.

System Process Data Flow Diagram

Virtual Ethnographic Research Mechanism

Dissertation Research for Democracy in the Workplace:

Finding Freedom, Liberty, and Justice in the Lived Environment

<u>System Process Data Flow Diagram</u>

Creation Date: 10/16/2009
Revision Date: 11/15/2009

Participant

1. Login — Verify and Authenticate Participant Login Information — ASP.NET - SQL

Logon Request

Selected Options

Participant Interaction

Participant Research Navigation Interaction

4. Research — Search and Display Requested Research Information — ASP.NET - SQL

Participant Identification

2. History — Display Participant History Information And Navigation Options — ASP.NET - SQL

3. Survey — Interact with Participant to Capture Survey And Navigation Information — ASP.NET - SQL

Navigation Research Request

Return to Survey

Logon Info

1 — Participant Logon Information

Participant Survey Option

Research Info

Navigation Information

Navigation Info

Navigation Information

2 — Participant Navigation History

Survey Responses

3 — Survey and Navigation Data

4 — Research Data

Email Request to Participate in Research

Logon Info

Participant Navigation History

Participant Response Information

Participant Research Information

7. Offline — Set up Non-Identifying Participant Logon Information and maintain Participant Information Offline — C#.NET - SQL

6. Analysis — *Analyze Research Compiled Results and Automated Analysis and Make Required Adjustments — ASP.NET - SQL

Compiled Research

5 — Research Compilation Data

Compiled Research

5. Compilation — #Compile Research Participants Responses, Navigation History and Perform Automated Analysis — SWARM-AI

8. Request — Request to Participate in Research — EMAIL

Analysis Results

6 — Research Analysis Results

Participant Info

Update/Maintain Participant Logon Information

Research Analysis

7 — Participant Offline Information

Researcher

Request to Participate in Research and Response

*The Analysis Process identifies where system adjustments may be required to ensure appropriate information is being captured and the system is running correctly as well as any research that may need to be expanded upon or changed to provide effective research learning paths for the Participants.

#The Compilation Process advanced SWARM and AI techniques to analyze the behavior of the participants related to the way they respond to various survey questions, the way the navigate through the Research System (their learning paths), and the way they change their responses based on their learning paths.
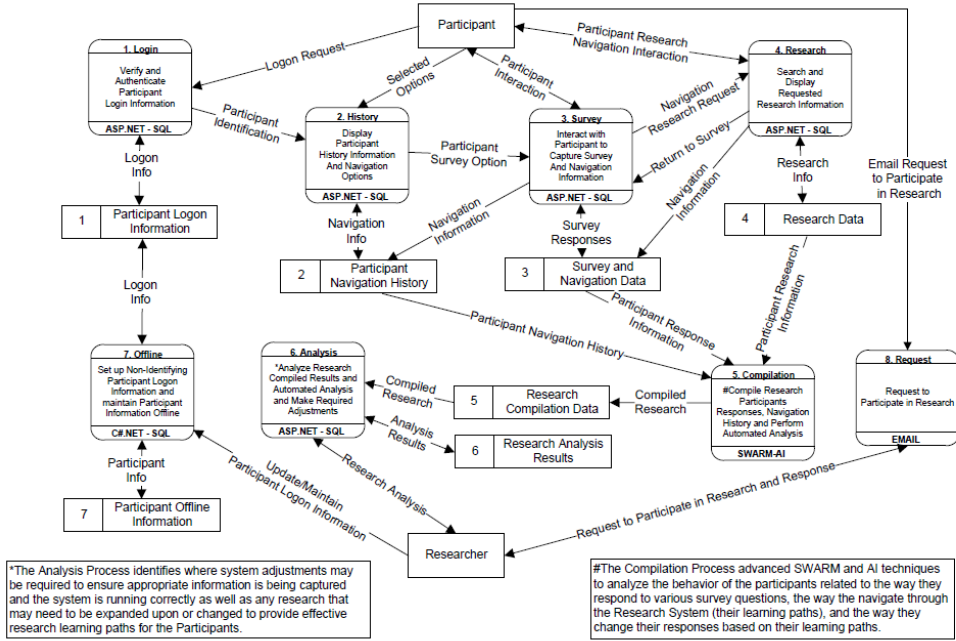
System Interface/Screen Design

1. Login Screen

PRELIMINARY DRAFT
Virtual Ethnographic Research Mechanism
Dissertation Research for Democracy in the Workplace:
Finding Freedom, Liberty, and Justice in the Lived Environment
System Screen Design – Login Screen

Creation Date: 10/17/2009
Revision Date: 11/21/2009

ASU Virtual Ethnographic Research for Democracy in the Workplace

File Reports Analysis Tools [?]

Login Screen | Research Questions Page 1 | Research Questions Page 2 | Research Questions Page 3 | Research Background

Democracy in the Workplace – Research Login

Please enter UserID and Password

UserID: [UserID]
Password: [Password]

Forgot Your UserID or Password, Click Here

*Want information about Participating in
this Research,* Click Here

NOTE: Please Do Not Enter Personal Identifying
Information into the Research System. If you have
questions, comments or concerns please email them
to the Researcher by Clicking Here

Status bar

2. Research Questions Page 1

Virtual Ethnographic Research Mechanism

Creation Date: 10/17/2009
Revision Date: 11/22/2009

Dissertation Research for Democracy in the Workplace:
Finding Freedom, Liberty, and Justice in the Lived Environment

<u>System Screen Design – Research Questions Page 1</u>

ASU Virtual Ethnographic Research for Democracy in the Workplace

File   Reports   Analysis   Tools   [?]

| Login Screen | Research Questions Page 1 | Research Questions Page 2 | Research Questions Page 3 | Research Background |

Democracy in the Workplace – Research Questions

On a scale of 1 to 5, where 1 indicates that you do not agree with the question (No) and 5 indicates that you agree with the question (Yes), please rate the following questions:

Questions related to Democracy in Society   1 2 3 4 5

Do you have a good understanding of what Democracy means?...................   ◯ ◯ ◯ ◯ ◯   [Research Question]

Do you feel that Democracy is important in Society?.................................   ◯ ◯ ◯ ◯ ◯   [Research Question]

Do you feel Democracy requires greater freedom for individuals in Society?.....   ◯ ◯ ◯ ◯ ◯   [Research Question]

Do you feel Democracy greater participation from individuals?....................   ◯ ◯ ◯ ◯ ◯   [Research Question]

Questions related to Democracy in the Workplace   1 2 3 4 5

Have you heard of Democracy in the Workplace?   ◯ ◯ ◯ ◯ ◯   [Research Question]

Questions related to Democracy in the Home

Questions related to the Principles of Democracy

What is Democracy?

| Describe what you feel Democracy is and how it effects individual's and activities in society. |

What is Democracy in the Workplace?

| Describe what you feel Democracy in the Workplace is and how it is or should be applied in the Workplace. |

Status bar

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System Architecture

The Virtual Ethnographic Research Mechanism will be based on a Web Browser Client developed in Adobe Flex interfaced to a Web Server Visual C# Application that is integrated with a Microsoft SQL Server Database environment. The initial system configuration will involve 2 Web servers (most likely 2 HP MediaSmart Server EX495 at an approximate cost of $2,000.00) (1 Web Server for Backup and Failover) along with a development workstation (most likely an HP Z800 Workstation at an approximate cost of $2,000.00 which includes MS Windows 7 & 4 GB of Memory and a 250 GB Hard Drive). The Server will be configured with a Microsoft Server operating system and Microsoft SQL Server 2008 Database Managements software.   The development workstation will require the Adobe Flex Builder software, Microsoft Visual Studio Development software and Microsoft SQL Server Database Management software.

System Database Design – Data Model

Virtual Ethnographic Research Mechanism

Dissertation Research for Democracy in the Workplace:
Finding Freedom, Liberty, and Justice in the Lived Environment

Creation Date: 10/16/2009
Revision Date: 11/22/2009

System Data Model Diagram

Survey Questions

PK,FK1	UserID
PK	QuestionNo
	Question

Participant Logon Information

PK	UserID
	PassWord
	CreateDate
	LastActive

Participant Survey Navigation Data

PK	UserID
	QuestionAnswer
	ResearchStatus

Reseach Data

PK,FK2	QuestionNo
PK,FK1,FK2	UserID
	ResearchID
	RelatedID
	ResearchStatus
	ResearchInfo
	ReseachComm

Participant Navigation History

PK,FK2	QuestionNo
PK,FK1,FK2	UserID
	LastAccessed
	LastScreen
	LastQuestion
	LastAnswer
	LastReseachID

Research Compilation Data

PK,FK1	QuestionNo
PK	UserID
	QuestionAnswer
	AnswerDate
	ReseachPathID
	AttachmentID

Participant Offline Information

PK	UserID
	UserFirstName
	UserMidName
	UserLastName
	PhoneNo
	Email
	CompanyName

Research Analysis Results

PK	QuestionNo
	QuestionSummary
	ResearchID
	ReseachSummary
	AttachmentSummary

Reseach Data Attachments

PK,FK1	ResearchID
PK,FK1,FK2	UserID
PK,FK1,FK2	QuestionNo
	CreateDate
	ResearchInfo

APPENDIX B

LISTSERV EMAIL SENT TO ASU GRADUATE STUDENTS

Dear Fellow Graduate Student,

I am a Justice Studies PhD candidate in the School of Social Transformation conducting a research study to determine how democratic principles impact work and home environments related to health, happiness and productivity.

I would greatly appreciate your participation in this research and in return will enter your name in a drawing to win a new **Apple iPad**. It is expected that your participation should not take more than 40 minutes depending on your level of involvement in answering the questions.

The research will take place over a one month period during which you may log on to the interactive Web Site at any time and review and change your prior answers. You can also look up information on democracy in the workplace and change your answers if you wish. There are no wrong answers. You will have until **September 30th, 2012** to complete the online survey.

Your participation in this study is voluntary. You may skip questions if you wish. If you choose not to participate or to withdraw from the study at any time, there will be no penalties or consequences but please let me know so that I can update the system accordingly. There are no foreseeable risks or discomforts in your participation in this research.

If you would like to participate in this research, please click on the link below and fill in the required information using **Signup ID: *Democracy*** and **Signup Password: *Freedom***. An email will be sent to you with a unique UserID and Password that will allow you to log into the research system web site.

Workplace Democracy Signup Site

All personal information should be communicated through email and not entered into the research system web site. Your responses will be kept anonymous in processing the analysis and summarizing the results of this research. The results of this study may be summarized in reports, presentations, or publications but your name will not be revealed or linked directly to the results.

Thank you so much for your consideration and I hope you are able to participate in the study.

Sincerely,

Randy Booze
ASU Graduate Student in Justice and Social Inquiry
School of Social Transformation
College of Liberal Arts and Science
Email: rbooze@asu.edu Phone: 480-510-4019

If you have any questions about your rights as a participant in this research you can contact the Chair of the Human Subjects Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at (480) 965-6788.

APPENDIX C

SYSTEM GENERATED EMAIL TO PARTICIPANTS

From:	Randy Booze <rbooze@asu.edu>
Sent:	*Day, Date, Time*
To:	*Participants Name and Email*
Subject:	Dissertation Study – Democracy in the Workplace

Dear *Participants_First_Name*,

Thank you so much for your interest in participating in the dissertation study related to democracy in the workplace and at home.

This research will provide an important foundation for understanding how people view and understand democracy within work and home environments and the impact of democratic principles on one's health, happiness and productivity in these environments.

Please use the UserID and Password provided below to log into the dissertation research web site link, *www.workplacedemocracy.info*:

      UserID: WDXXXXX
      Password: XXXXXX

Please note that the research will take place over a one month period during which you may log on to the interactive Web Site at any time and review and change your prior answers. You can also look up information on democracy in the workplace and change your answers if you wish.

You will have until **September 30th, 2012** to complete the online survey.

Your participation in this study is voluntary. You may skip questions if you wish. If you choose not to participate or to withdraw from the study at any time, there will be no penalties or consequences but please let me know so that I can update the system accordingly. There are no foreseeable risks or discomforts in your participation in this research.

Once you have completed the online survey, your name will be entered into a drawing to win a new **Apple iPad** and the drawing will occur in October 2012.

Thank you again for your willingness to participate in this study.

Sincerely,

Randy Booze
ASU Graduate Student in Justice and Social Inquiry
School of Social Transformation
College of Liberal Arts and Science
Email: rbooze@asu.edu Phone: 480-510-4019

APPENDIX D

INSTITUTIONAL REVIEW BOARD EXCEMPTION LETTER

Office of Research Integrity and Assurance

To:	Mary Romero
	WILSN
From:	Mark Roosa, Chair
	Soc Beh IRB
Date:	08/09/2011
Committee Action:	**Exemption Granted**
IRB Action Date:	08/09/2011
IRB Protocol #:	1107006692
Study Title:	Democracy in the Workplace

The above-referenced protocol is considered exempt after review by the Institutional Review Board pursuant to Federal regulations, 45 CFR Part 46.101(b)(2) .

This part of the federal regulations requires that the information be recorded by investigators in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. It is necessary that the information obtained not be such that if disclosed outside the research, it could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation.

You should retain a copy of this letter for your records.

BIOGRAPHICAL SKETCH

Randy Booze has been an IT Architect at the City of Mesa for the past 25 years and has taught a graduate course in Geographic Information Systems (GIS) technology in the School of Public Affairs at Arizona State University over the past 8 years.

Randy has a Bachelor of Science in Design degree in Urban and Regional Planning from Arizona State University's College of Architecture, a Master of Science degree in Decision and Information Systems from ASU's College of Business. Randy's PhD research focus includes Justice, Public Administration, Law, and Technology. Randy is a member of Beta Gamma Sigma - Business College National Honor Society and ALPHA IOTA DELTA - Decision Sciences Institute - National Honor Society.

Randy has assembled prior research in the areas of Legal Issues in GIS Use in Government (Master's Thesis) used to support the Arizona Geographic Information Council Admin and Legal Committee. Randy has presented at an international GIS conferences and has assembled a GIS Models in Research (Doctoral Level Research in Public Administration) presentation that has been presented at various industry and graduate training seminars.

Randy has been involved in all phases of GIS technology implementation over the past 30 years including major systems integration of GIS technologies within local governmental operational and utility systems. Randy has worked for both public and private agencies supporting their GIS efforts. Randy continues to provide support to various State and Local agencies as well as Indian Communities through training and specific assistance with the implementation of GIS related projects and technologies.