Condensed Version

For quick reading, I suggest that you focus on the literature review from **pages 4-14** and the secondary data from **pages 19-22**. That way, it would be a shorter read in story form along with interesting summaries of peer reviewed studies to back it up.

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Abstract

The purpose of this research study was to consider the effects of conscious human intention on improvement initiatives in Canadian organizations. Emerging theories from quantum physics about how our reality is created show that not only do we have the ability to socially construct our epistemological world (knowledge, systems, thoughts, ideas, language, etc.) but that we have the ability to influence the creation of our ontological world as well (material reality, matter, physical reality, etc.) through conscious focus of our thoughts and emotions.

Due to the lack of previous research into this subject within the management discipline, the literature review shows a causal link and parallel thinking between quantum physics theories and social constructionism, and then between social constructionism and emerging management theories and practices such as appreciative inquiry, organizational development and complex adaptive systems (CAS), in order to provide the background on how it be might be applied to organizations, management practice and improvement initiatives in particular.

Secondary data was introduced to show how improvement initiatives and their rates of success are currently studied through surveys, interviews, and focus groups in order to establish the method for collecting primary data in relation to the research question(s) in a similar fashion. Secondary data was also introduced to follow the causal link constructed by the literature review using scientific methods with control groups and statistical testing to show the effects of conscious human intention at the macro, biological and social levels, including appreciative inquiry, which is an emerging change management and improvement methodology, closely aligned with many of the identified attributes of conscious human intention.

Primary data was collected on past improvement initiatives in the form of an online quantitative survey of specific groups normally involved with improvement initiatives in Canadian organizations, with a percentage of survey respondents invited to participate in a qualitative telephone interview in order to add further details to their survey responses.

While the secondary data studies using scientific methods with control groups and statistical testing clearly showed the potential for use of conscious human intention in influencing the outcome of improvement initiatives, evidence from analysis of the primary data collection using surveys and telephone interviews of completed improvement initiatives did not contain the rigor required to separate attributes of conscious human intention from current improvement best practices. Further research is recommended using similar methodologies as those employed by the previous studies that have successfully shown an outcome influenced by conscious human intention.

Literature Review and Theory

The following contains a review of relevant literature that takes into consideration an appropriate meaning of the terms conscious and consciousness, intention, and how they apply in a manner relating to a human being's ability to manifest measurable social and physical change locally or at a distance through focused thought and emotion. It will look to show how this phenomenon is being proven at the macro, molecular and social levels, and link the applicable science and attributes of conscious human intention to current management and social theory, principles and practices. This will be applied to how they might relate in our everyday work lives, specifically to improvements in the workplace. The literature review will provide the foundation for the theoretical framework of this study, which can then be established against primary and secondary empirical data.

Organizational management models and disciplines "have evolved and developed over time. The evolution of these models reflect changes in social values; they also reflect advancements in general ways of thinking about the world drawn from a wide range of disciplines in the physical, natural, and social sciences as well as the arts and humanities" (University of Leicester, 2005, p.20). In some instances these different disciplines may experience growth seemingly parallel to each other, without being aware that they are describing the same theories and principles in their own unique way.

Improvement Initiative Methodologies

Improvement Initiatives within the workplace currently make use of different methodologies to achieve success. Although many of these methodologies may find their birth in specific management disciplines, the lines are sometimes blurred and they or their concepts may find themselves practiced by professionals in each perceived field. The Plan, Do, Check Act (PDCA), sometimes referred to as Plan, Do, Study, Act (PDSA), is a common improvement philosophy and methodology that identifies the relation of proper steps to a continuous improvement, was introduced by Walter A. Shewart and then W. Edwards Deming from the Quality Management Discipline (Oakes and Westcott, 2001). Similarly, the Six Sigma methodology originating from the same discipline is a structured program linking different individual improvement methodologies with a focus on the use of statistics and the decrease of variation within a process (Oakes and Westcott, 2001).

Process Engineers are normally concerned about the efficiencies in operational processes, and from this specific discipline developed LEAN, again a structured methodology, but this time with a focus on process waste such as number of steps, travel for employees and materials, and

production times (Oakes and Westcott, 2001). Although LEAN was developed through the Process Engineering discipline, it is now a key methodology used within Quality Management as well and is many times joined with Six Sigma programs to provide a more holistic improvement.

Project Management is both its own discipline and methodology, and perhaps the most structured of all. It is used not only for improvement of existing processes and programs, but for implementation of new ones, and often has a longer lifespan (American National Standard, 2004). Concepts and components of project management are used formally and informally within the other management disciplines, but rarely to the extent project management professionals use them.

In each of these methodologies, the focus is primarily on structured activities done in a certain planned manner to achieve a measureable result with a focus on process, and takes a positivism approach (Donaldson, 1996). It has only been lately that the key roles of humans and their relationships to sustainable improvement have been given an equally critical emphasis.

Organizational Development (OD) is a field of study and practice to improve organizational effectiveness and health through planned interventions in the organizations processes, using behavioral-science knowledge (Beckhard, 1969). One of the aspects related to humans within the confines of an improvement initiative emphases the changes they must go through to not only accept, but support the different social realities that the improvement will create for them.

Change Management was developed through the OD discipline, an evolving offshoot of the Human Relations side of management theory. Many times referred to as Change and Transition Management, it seeks not only to prepare for the human reaction to any large scale changes in their work environment, but to harness the capacity for employees to add to the success and sustainability of the event (Bridges, 2003). But even with its primary focus on humans and their inter-relations, OD still relied on process, like the other methodologies, and even shared some of the same characteristics. It's traditional "diagnostic approach is based on the ideas of classical science, positivism, and a modernist philosophy" (Siminia and van Nistelrooij, 2010, p.387), and while it sought to engage stakeholders to a much greater extent and gather their collective viewpoints as part of a collaborative effort, it still planned an initiative in a diagnostic manner by gathering information about data to be collected, collection methods, time and resources required and committed, and other information similar to the other project and improvement methodologies.

Social Constructionism

A fundamental influence to the Organizational Development (OD) field, with its emphasis on people and change within organizations, comes from the sociological theory of knowledge known as Social Constructionism. The emergence of Social Constructionism is usually attributed to a treatise titled the Social Construction of Reality (Berger and Luckmann, 1966). It contends that the reality that surrounds us is socially constructed by the beliefs, understandings, feelings, of the groups of humans that inhabit it. There is great debate, however, about the separation of what constitutes social reality, which can change when those beliefs, understandings and feelings of the groups change, and what should be construed as physical reality; those things governed by the natural laws of science. For example, Paul Boghossian, professor of philosophy at New York University, felt that it was crucial "to distinguish between a constructionist claim that's directed at things and facts, on the one hand, and one that's directed at beliefs on the other" (2014, p.2). His feeling was that material things were either real or they weren't, and that "surely science cannot construct those things; at best, it can discover them" (2014, p.4).

Perhaps science was doing both. Around the same time that Berger and Luckmann were proposing the social theory that our reality is determined by what people believe it to be, a famous thought experiment, called the double-slit experiment, was being presented by a renowned physicist to prove a scientific theory proposing essentially that humans have the conscious ability to construct their world, material or not (Feynman, 1964). The theory, called wave-particle duality, was postulated by quantum physicists in the early part of the 20th century, and proposed that all things (energy and matter) were held in a state of potentiality until such time as they were observed by conscious human beings, at which time they became fixed. The thought experiment itself, which represents a methodology for how a theory might be proven, had aspects of it demonstrated since then, but it wasn't until just lately that it has actually been successfully performed in its entirety (Bach et al, 2013).

"In the classical physics view of the natural world, it is common to think of mass as something apart from energy and to think that, on the one hand, there is a law of conservation of energy, and on the other, a law of conservation of mass, and that the two are independent" (Asimov, 1984, p.348). But in Albert Einstein's collection of Nobel Award winning papers published in 1905, his view was that changes in mass were intimately involved in changes of energy, and he insisted that "although energy can be neither created nor destroyed, it can be changed from one form to another. This would seem to mean that a certain quantity of mass could be converted to a certain quantity of other forms of energy...and that a certain quantity of a form of energy…might conceivably be converted into a certain quantity of mass" (Asimov, 1984, p.348).

This meant, then, that things could change, from mass to energy, and back to mass again, in a constant stream of reconfiguration of matter, which defines the reality of our physical world and universe around us. If we added this concept to those from the worlds of quantum physics and social constructionism, it strongly suggested that both our physical and perceived realities were dependent upon our understanding and beliefs of what they should be, and that as those understanding and beliefs change, so too does our reality.

Appreciative Inquiry

Appreciative Inquiry (AI) is a management philosophy and basis for numerous change and improvement methodologies within the Organizational Development (OD) field. It was first interpreted in the 1980's by David Cooperrider, a doctoral student of philosophy from Case Western Reserve University in Cleveland, Ohio, completing placement work within an organization. When asked to inquire into what improvements could be made within the organization, Cooperrider enlisted the help of employees by engaging them to share their common beliefs, understandings and feelings about best practice in the organization. The results of improved performance were startling and eerily similar to the effects of the Hawthorne experiments, but with a decided difference (University of Leicester, 2005). There were no perceivable adjustments to the employees work environment other than the inquiries themselves (The Staff, 2005). This phenomenon went on to become the subject of Cooperrider's doctoral thesis (1986) and a seminal written work on AI as a management philosophy co-written by his thesis advisor (Cooperrider and Srivastva, 1987).

Although AI grew out of OD, traditionally following a diagnostic approach, it embraced another, newer, evolving style coming into vogue called the dialogic approach that is favoured by others within the OD field. "The dialogic approach, by contrast, is more interpretative, based on social constructionism and a critical and postmodern philosophy" (Siminia and van Nistelrooij, 2010, p.387). This caused a critical shift in the direction that reality was socially constructed. In Dialogic OD projects, "the initial issue has been reframed in possibility centric and future focused ways. For example, instead of working on the problem of dissatisfied customers by analyzing what went wrong in the past, we work on the possibilities for creating raving fans by focusing on what they want in the future" (Bushe, 2013, p.14). AI engaged employees to inquire about the positive core of an organization, and to use strength-based positive language when telling their stories. This was an abrupt change to the traditional improvement methodologies and had many detractors, especially in the quality management discipline used to the concept of problem solving. Luckily for AI, it had an ally in "management guru Peter Drucker who, when asked to distill the essence of what he knows about leadership said, the task of leadership is to

create an alignment of strengths, making our weaknesses irrelevant" (Fusion of Strengths, 2004).

In an improvement initiative at British Airways using AI methodology, employees were asked to reframe the problem of lost baggage by asking themselves the question of what they wanted more of, instead of less of. The resulted reframing of the improvement objective was exceptional customer experience (Whitney and Trosten-Bloom, 2003). This highlighted an additional departure from the traditional problem solving culture of improvement; that of looking at the need for improvement of the system holistically, rather than the solving of individual problems within the system. It also suggested fundamentally changing the perception of reality that the improvement team was looking at creating.

Complex Adaptive Systems (CAS)

A new model is emerging that may become influential in how organizations manage in the 21st century. It is already a model “being taken seriously in the natural sciences, and in social science subjects such as economics, psychology and management” (University of Leicester, 2005, p.29). It belies the traditional management practices that focus on cause and effect, improvements to singular problems instead of viewing things in a holistic fashion, and the need for equilibrium, peace and tranquility within the workplace; a condition that is now viewed as a veritable death wish, since organizations that grow static are left behind. It also disputes the success of closed systems, which is representative of improvement methodologies such as the PDCA continuous improvement loop, project management and Lean Six Sigma methodologies (Gupta, 2005).

“Complex adaptive systems (CAS) are fluidly changing collections of distributed interacting components that react to both their environments and to one another. Examples of CAS include the electric power grid, telecommunications networks, the Internet, biological systems, ecological systems, social groups, and even human society itself” (Argonne National Laboratory, 2014). “The rise of CAS as a school of thought took hold in the mid-1980’s with the formation of the Santa Fe Institute” (Dodder and Dare, 2000, p.1). It is the embodiment of a collaborative theory, notably because it exists across all disciplines in life, from the study of phenomenon at a quantum level to how our social interactions in organizations behave.

CAS, with its concepts steeped in Complexity Theory and Systems Theory, constitutes a common thread of understanding between management practices and the quantum theories describing our natural world. It may well be more appropriate as a management system model that calls for a holistic view of organizational systems and allows for improvement initiatives that utilize the evolving ways of our natural world, rather than the rigid, closed-loop processes that

focus on prediction through the traditional mechanistic methods of cause and effect, and foster failure through their inflexibility to allow for adaptation of the final results.

The view that “a system is an integrated whole, whose properties cannot be reduced to the sum of its parts” (Dann and Barclay, 2006, p.22), for example, mirrors the views of many prominent scientists. David Bohm, an American theoretical physicist who wrote the definitive textbook on quantum physics (1951), did not believe in the separateness view of classical physics, and further postulated that everything in the universe was part of a whole, not just interconnected (Bohm, 1980). This is supported by the scientific community through the quantum theories first proposed by physicists Neils Bohr and Werner Heisenberg through what was termed the Copenhagen Interpretation (Heisenberg, 1930). The theories included that of nonlocality; where particles at a distance to each other were found to be interconnected; entanglement, where those same particles are thought to share information; and the notion of a zero point energy field, advocating that there exists the presence of fields of interconnected particles everywhere in the universe. In fact, “there is a field associated to each type of fundamental particle that appears in nature” (Tong, 2007, p.1), and “that what we perceive through the senses as empty space is actually the plenum (a space completely filled with matter), which is the ground for the existence of everything, including ourselves” (Bohm, 1980, p.243).

Nor is the concept of nonlocality and entanglement just a theoretical exercise. As with the case of wave-particle duality, these other concepts of how the universe works at the quantum level have been duplicated in controlled experiments. “Physicists at the University of Geneva achieved the weird result by creating a pair of ‘entangled’ photons, separating them, then sending them down a fibre optic cable to the Swiss villages of Satigny and Jussy, some 18 kilometres apart” (Brumfiel, 2008, para.2). Nor is it just exclusively between two separate particles. “For the first time, physicists at the Institute for Quantum Computing (IQC) at the University of Waterloo have demonstrated the distribution of three entangled photons at three different locations (Alice, Bob and Charlie) several hundreds of metres apart” (Erven et al, 2014, p.2).

What this proposes is that as our concepts of the laws of the natural world change, so too should our concepts of how we work within those natural laws. This was substantiated through an important work in the early 1990’s by management consultant, academic and author Margaret Wheatley on the links between quantum theories and organisations. Wheatley wrote about the reality of an organizational field, similar to quantum particle fields, and the constant (cultural) weaving and changing within organizations due to interactions between human networks. Her view was that chaos was necessary to effect meaningful change, and its negative

reputation could come from the inability to readily see the confines of order it really works within (Wheatley, 1999).

Peter Senge, an American systems scientist who is a senior lecturer at the MIT Sloan School of Management, is best known for his seminal work The Fifth Discipline (1990), where he referred to systems thinking as “a discipline for seeing wholes. It is a framework for seeing inter-relationships rather than things, for seeing patterns of change rather than static snapshots”. In his book, he cites W. Edwards Deming, whom many consider the most influential figure within the quality management discipline, as his inspiration. In fact Deming, better known for Total Quality Management (TQM) and the PDCA continual improvement wheel cited earlier, ended his life’s work with a noticeably different viewpoint on how organizations create. “The System of Profound Knowledge (SoPK) is the culmination of Dr. W. Edwards Deming’s lifelong work. It is an effective theory of management that provides a framework of thought and action for any leader wishing to transform and create a thriving organization” (The W. Edwards Deming Institute, 2014, para.1).

This was a huge departure from (Deming’s) past views of quality and perhaps his greatest contribution. It supported the notions of systems theory and complexity theory, and of CAS as an appropriate management model for the 21st century. “Taking a systems approach enables management to view its organization in terms of many internal and external interrelated connections and interactions, as opposed to discrete and independent departments or processes governed by various chains of command. When all the connections and interactions are working together to accomplish a shared aim, a business can achieve tremendous results—from improving the quality of its products and services, to raising the entire esprit de corps of a company” (The W. Edwards Deming Institute, 2014, para.4). What this paints is a picture where modern management theory is starting to mirror modern scientific theory, yet our overall way of thinking remains mired in traditional diagnostic management practises and the mechanistic laws of classical physics.

Constructing Reality

Consider for a moment a famous question that has plagued the Western physic for hundreds of years. “If a tree falls in a forest and no one is around to hear it, does it make a sound?” is based loosely on Anglo-Irish philosopher George Berkeley’s treatise concerning the principles of human knowledge (Berkeley, 1710). In the classical sense of how reality works, the tree will fall and make a sound in any case, hence the reasoning behind those who state the case for a division between socially constructed reality and undisputed reality, but in the quantum view, all bets are off until a conscious observer comes into play. On the one hand, it may be a stretch to

think that the human observer influences at the subatomic particle level can equate into creation of material reality at the molecular and physical levels.

On the other hand, that may already be happening. In his early 20th century book, North American self-help guru Wallace D. Wattles talks about a “cosmic intelligence which is in all things and through all things” (Wattles, 1911, p.14). Although he has a defined slant towards religious expression, he repeatedly describes the energy of thought forms, continually held over time, being made into material things, and calls what unnervingly sounds like quantum fields “the thinking substance” (Wattles, 1911, p.22). In the late 1930’s, another world-renowned author and self-help guru Napoleon Hill was writing a pivotal treatise on personal success that would become one of the bestselling books of all time, selling 20 million copies by the 1970’s (The Milwaukee Sentinel, 10 November 1970, p. 12). A contemporary of Andrew Carnegie and advisor to President Woodrow Wilson, Hill’s views on the achievement of success eerily paralleled those starting to be observed by the scientific and social communities. “The subconscious mind works day and night. It draws upon the forces of Infinite Intelligence for the power with which it voluntarily transmutes desires into their physical equivalent” (Hill, 1937, p.180).

Similar views continued on into other disciplines as well, as they applied the same fundamental principles; many of the thought-provoking ideas espoused by members of other scientific disciplines. Bestselling author and Medical Doctor Deepak Chopra writes about the “shift from outright rejection and ridicule of alternative healing approaches to serious investigation” (Chopra, 2000, p.3), including reference to quantum theory and its relation to healing. He refers to a quantum (human) body with a network of intelligence contained in the body’s trillions of cells, not just the brain, responding to thought and emotion, “not localized in space-time, extending in all directions like a field” (Chopra, 2000, p.137).

With a PhD in developmental biology from the University of Virginia, Bruce Lipton promoted the idea that genes and DNA can be manipulated by a person's beliefs. Lipton proposes that beliefs control biology and cites the lacklustre way the medical community deals with the placebo effect, “also called the placebo response, a remarkable phenomenon in which a placebo - a fake treatment, an inactive substance like sugar, distilled water, or saline solution - can sometimes improve a patient's condition simply because the person has the expectation that it will be helpful” (Medicine Net, 2014). Lipton proposes that “the placebo effect should be a major topic of discussion in medical school” (Lipton, 2008, p.108). Instead, the placebo effect is written off as an unsubstantiated statistic in experimental trials. Each of these postulations from respected members of so many of society’s different disciplines all diverging in the same direction, deserve a much more serious regime of concentrated research.

Conscious Human Intention

If our reality is indeed made from agreed upon socially constructed views, and if those social constructions extend to the material world, it stands to reason that if we focus more on how these views are manifested, we may be able to increase the success rate of improvement initiatives in the workplace.

Harrap's Essential English Dictionary describes consciousness as “the state of being awake and aware of one's surroundings” (Harraps, 1996, p.196). This is a default simple description that is prevalent within mainstream society and commonly understood. But consciousness is also an airy thing. The online Stanford Encyclopedia of Philosophy says that “perhaps no aspect of mind is more familiar or more puzzling than consciousness and our conscious experience of self and world. The problem of consciousness is arguably the central issue in current theorizing about the mind” (Van Gulick, 2014, intro). But what is consciousness, precisely? Above and beyond the aspect of awake and aware, numerous theories of consciousness abound, each with their many forms. One of these is the quantum theory of consciousness which states that “the nature and basis of consciousness cannot be adequately understood within the framework of classical physics but must be sought within the alternative picture of physical reality provided by quantum mechanics” (Van Gulick, 2014, section 9.8).

This was advocated even more fiercely by Bohm who postulated an approach on the relationship between mind and matter “based on the causal interpretation of the quantum theory, in which an electron, for example, is regarded as an inseparable union of a particle and a (quantum) field” (Bohm, 1990, p.271). He speculated on the field containing similar information providing a close relationship to what we held in our own experiences, leading to a “new theory of mind, matter, and their relationship, in which the basic notion is participation rather than interaction” (Bohm, 1990, p.271). In a recorded interview, Bohm spoke about mind-like quality of the electron (and presumably other particles), the fact of the physical universe being made up of information and substance, and finally of the primary role of information in creating form from the substance (Bohm, 1989). What this would all suggest, then, other than the fact that we are all continuously connected to everything, everywhere, is that there is a wholeness to our existence, and that as conscious humans, we have the innate ability to create things through the formation of matter via our conscious observation.

But casual measurement or observation of an event is only a part of the equation. It's also "the dynamical effects within quantum theory of the intention and attention of the observer” (Stapp, 1999, p.5), and where he(she) “does more than just read the recordings, he(she) also chooses which question will be put to Nature: which aspect of nature his(her) inquiry will probe” (Stapp,

1999, p.18). This view of the importance of what question the observer is asking about is also one of the key social principles of Appreciative Inquiry (AI). The Principle of Simultaneity recognizes “that inquiry and change are not truly separate moments, but are simultaneous….the things people think and talk about, the things people discover and learn, and the things that inform dialogue and inspire images of the future are implicit in the very first questions we ask. The questions we ask set the stage for what we find, and what we discover (the data) becomes the linguistic material, the stories, out of which the future is conceived, conversed about, and constructed” (Cooperrider and Whitney, 2005, p.19).

In order to construct that formation of matter, however, we need to have a focus, a goal on what it is that we wish to create. The word intention is oft used combined with conscious or consciousness to describe both the vehicle and direction we as humans have over the formation of matter based on the theories and principles of quantum physics, and the concepts of social constructionism. In other instances, just the single word intention is used to convey the entire meaning. The online Oxford English Dictionary (OED) is described as the definitive historical record of the English language. In its first definition of the noun intention, it defines it as “the action of straining or directing the mind or attention to something” and adds the notions of “ultimate purpose” and the “aim of actions” in further meanings (Oxford English Dictionary (OED), 2014).

In her seminal books The Field and The Intention Experiment, author Lynne McTaggart’s research of the connections between science, consciousness and human intention revealed startling discoveries that forced the subject onto the mainstream stage. She states that “targeting your thoughts – or what scientists ponderously refer to as intention and intentionality – appeared to produce an energy potent enough to change physical reality” (McTaggart, 2007, preface). Although her detractors cite the fact that she wasn’t the first to see the connections between consciousness and scientific theory and that she is an investigative journalist rather than a physicist, she was certainly exhaustive in her approach to explaining the science behind conscious human intention. She claims to have had up to twenty interviews each from some seventy-five frontier scientists on the subject of quantum physics, taking ”their frequently incomprehensible answers and play(ing) them back via a metaphor until both could agree upon a lay approximation” (McTaggart, 2008, XVIII).

The attributes identified that drive conscious intention are almost as contentious as consciousness itself, but there seems to be some common-sense agreement on many of them, such as the clarity on what is intended, including the nature of the language used, strength of intention through number of conscious participants, their continued focus, determination, and emotion, including passion (McTaggart, 2008; Dyer 2010; Lipton, 2008). Some feel that it’s not

enough to want it, will it and feel it, but that actions need to be taken to support the intention (Wattles, 2007; Byrne, 2006; Hill, 1937), and still others feel that chaos is required to effect substantial change (Wheatley, 1999; Gharajedaghi, 2011; Senge, 1990), including the management model Complex Adaptive Systems (CAS) itself, described as a balance "between order and anarchy, at the edge of chaos" (Dodder and Dare, 2000, p.3). In addition, "language, a fundamental aspect for the process of knowledge production, is not conceived of as describing and representing the world, but as a way of constructing it" (Camargo-Borges and Rasera, 2013, p.2).

The nature of the language used to aid in conscious intention is supported by the core principles of Social Constructionism in the context of Organizational Development and AI (Cooperrider, 1986), that promotes conscious collaboration, widespread emotion, and clarity of purpose for improvement initiatives using positive, strength-based language. Although AI is not focused on the use of conscious human intention itself, it is connected through social constructionism and contains many of its attributes, where documented case studies of its use have shown spectacular results (Ashford and Patkar, 2001; Saint, 2010).

Common Attributes of Conscious Human Intention	
1	Clarity of the intention
2	Strength of the intention (individual abilities, number of participants)
3	Continuation of focus (communication, engagement)
4	Level of determination, resolve, perseverance
5	Feelings and emotion (passion)
6	Nature of language (problem-based, strength-based)
7	Level of chaos
8	Actions to support intention

Table 1 List of Common Attributes for Conscious Human Intention

This review of past literature and research into the different disciplines related to the concept of conscious human intention being successfully applied to improvement initiatives in the workplace has shown that, while there is still debate surrounding the relevant theories proposed by quantum physicists about the natural world and its parallel view within social constructionism, the subject bears serious attention rather than hasty dismissal.

Data Collection

Selecting the Methodologies

A mix of methodologies known as triangulation (Saunders, Lewis and Thornhill, 2009; Module, 2011) was used to support the theories relevant to this research study. Secondary survey data demonstrates the general level of improvement initiative failure both in Canada and other countries, and represents the way data is gathered about this subject. Secondary data in the form of controlled experiments is used to show adherence to the scientific theories that human conscious intention can influence physical reality and matter at the macro, biological and social levels, in order to demonstrate its potentiality within organizational social structures and results, particularly improvement initiative success rates. In addition, a study on the effects of Appreciative Inquiry (AI) was added to demonstrate that link between conscious human intention and management systems concerned with improvement initiatives. Primary data was also collected in the form of an online survey of completed improvement initiatives in Canadian organizations, with questions based on the common attributes of conscious human intention. A sample of the survey responses were selected for further telephone interviews in order to develop short case studies of the improvement initiatives with further detail.

Primary Data

The population of improvement initiatives within Canadian organizations is vast, considering that the country has almost 18M employed citizens as of 2014 (Statistics Canada, 2014). With this in mind, any sampling will be considered non-probability and non-representative of improvement initiatives as a whole, or even representative of the Canadian work population. The attributes of non-probability sampling displayed in the primary data collection methodologies include **quota sampling**, such that the two key sectors of employment (public and private) are equally represented, and **purposive sampling**, because the survey invitation was targeted at specific groups of employees within the Canadian workplace.

Primary research data was collected in the form of an online survey of completed improvement initiatives in Canadian organizations, with a percentage of survey respondents invited to undertake a more detailed telephone interview in order provide a better understanding of their survey responses. The decision behind this methodology was to collect initial data in a manner similar to the way data has been collected in previous studies involving improvement projects. Survey invitations were sent to individuals through intermediary organisations that have targeted groups relevant to workplace improvement initiatives.

These groups included:

- Project managers and team members;
- Lean/Six Sigma practitioners;
- Change Management practitioners and;
- Quality professionals.

A section at the end of the survey was added for respondents who wished to be considered for a qualitative telephone interview and consent to a short case study on their improvement initiative (Saunders, Lewis and Thornhill, 2009; Module, 2011). An approximate 10% of these were selected for further interview and study.

A pre-qualification was provided at the start of the survey to reduce the chance of inappropriate respondents and they were asked to use their last completed improvement initiative, in order to randomize the results and better assist with their memory of events. The qualitative telephone interviews captured more in-depth stories from volunteer respondents of improvements. The interviews also provided further insight through tone of voice and language used, but did not have the advantage of including body language.

A pilot of the online survey was held to pre-determine any potential issues that respondents might have in answering the questions. Feedback was provided by the pilot respondents and adjustment to the questions were made, as appropriate

Quantitative data from the survey was analyzed using IBM SPSS to look for significant statistical correlations between the dependent variable represented by the results of the improvement initiatives, and independent variables represented by questions related to attributes of conscious human intention (Read, 1998). Survey responses used for the analysis included a total of 66 completed up to the dependent variable and 57 completed after the dependent variable.

Validity

Validity overall looks to make sure that we are actually asking the right questions to measure the right thing. There are three types of validity to consider. The first is called construct or measurement validity, and asks if we are actually measuring what it is we want to measure? In the case of the primary data collection, a series of independent questions about the completed improvement initiative were selected for their relation to the attributes of conscious human intention with the plan to statistically test their relationship to the overall dependent question of the improvement initiative's outcome. Internal validity asks whether we are confident that the independent questions will have a relationship with the dependent question. The interdependent

questions were selected not only on their linkage to attributes of conscious human intention, but also because they represented specific best practices in improvement methodologies. External validity asks whether the questions are artificial or whether they will be easily recognizable by the person viewing the question. By selecting questions that represented best practice in improvement methodologies, qualifying survey respondents before they took the survey, and asking them to apply the questions to their last completed improvement initiative, it was felt that the survey questions would be very real and recognizable to the respondents (Irwin, 2014, chapter 2).

Reliability

Reliability represents repeatability. It asks the question of whether the same results would occur "if the research was repeated again with the same research subjects" (Irwin, 2014, chapter 2). Survey invitations were sent to select groups within the process improvement communities who would recognize the nature of the questions and their corresponding nomenclature. The survey introduction stated qualifications for respondents to take the survey to help ensure that the respondents were part of these groups. In addition, the questions were kept simple, with added explanations only when required.

Generalizability

Generalizability is a statistical term used to denote the transfer of research findings and conclusions from a sample to the population as a whole. The primary data collection in support of this research study is the first time that the subject of conscious human intention is raised in relation to organizational improvement initiatives. In addition, the sample size used does not represent the population of improvement initiatives in Canadian organizations, and so the results will only be representative of the sample itself.

Ethical Issues

There were two levels whereby potential ethical issues might exist during data collection of primary data; the invitation of survey respondents through intermediary organizations, and the survey respondents themselves, during the completion of the online survey and in a sample percentage of the survey population, during the extended telephone interviews. In Canada, the most common policy used by researchers that describes ethical governance when humans are involved is through the Tri-Council Policy and the Government of Canada. Although there were no at risk groups anticipated during either the online survey or subsequent telephone interviews, the policy specifies how all involved must be treated and that "respect for persons implies that individuals who participate in research should do so voluntarily, understanding the purpose of the research, and its risks and potential benefits, as fully as reasonably possible" (Canadian et

al, 2014, p.27). A consent form was provided to the intermediary organizations based on an appropriate template (Cornell, 2014) stating the purpose of the survey and asking for their voluntary assistance by providing an invitation to their staff, members and clients. In addition, the start of the online survey reiterated its intent, qualifications for participation, voluntary nature, and provided the researcher's contact information if they had any questions.

Analysis and Results

There are two basic data collection and analysis conventions represented; quantitative and qualitative data through surveys, interviews and focus groups, and quantitative data through controlled experiments.

Secondary Data - Improvement Projects

Three representative studies on the state of completed improvement projects were selected based on the level of credibility (large established consulting firms and associations), dates conducted (within the past 17 years), and types of projects (IT, operational, management). The purpose in introducing these studies is to show the traditional methodologies used to analyze success rates with improvement initiatives, through the use of surveys and interviews, and linking to the decision to conduct initial primary data collection in the same way.

KPMG - KPMG is one of the largest professional services companies in the world, employing 162,000 people, with its global headquarters in Amstelveen, the Netherlands. Survey questionnaires were sent to Canada's 1450 chief executives in leading public and private institutions across Canada to determine the level and causes of IT project failure. Of 176 responses analyzed, 61% reported a failed IT project either from over budget, over schedule, or from a failure to meet the objective. It also found that the three most common reasons for project failure were poor project planning, having a weak business case, and a lack of top management involvement and support (Whittaker, 1999).

IBM Global Making Change Work Study - IBM Global Business Services, a division of IBM, is the world's largest business and technology services provider. It employs over 190,000 people across more than 160 countries. This study was conducted through surveys and face-to-face interviews with more than 1500 practitioners worldwide including project leaders, sponsors, project managers and change managers. Very similar to the KPMG study of 10 years before, the results found that, on average, 41% of projects were considered successful in meeting project objectives within planned time, budget and quality constraints, compared to the remaining 59% of projects which missed at least one objective or failed entirely (IBM, 2008).

In contrast to the nearly identical failure rate of ~60% cited in the two previous studies, a report from the **Project Management Institute (PMI)**, taken from a 2012 dissertation from the University of Warwick focusing on Benefits Realisation Management and its influence on project success, shows a different perspective (Project Management Institute, 2013). In the report, data from a random sample of 331 respondents showed an 86.1% success rate based on final perceptions of success. However, realizing that different stakeholders in the improvement might

have diverse perspectives, the study also assessed the success rate perceptions of the Project Sponsor, Team and Customer as well. The results ranged from 80.7% to 87.3%.

Secondary Data – Conscious Human Intention

Random Event Generators - A random event generator (REG) is a physical device designed to generate a 1 or a 0 lacking any pattern. The laws of probability state that each number has an equal chance of being generated and so we would expect to see a normal distribution being built as we randomly generate the numbers. At small sample sizes (200), the normal distribution bell curve may not be so apparent, but as the sample size grows, the distribution becomes very visible.

During a 12 year period, researchers from the Princeton Engineering Anomalies Research (PEAR) School of Engineering and Applied Science at Princeton University completed more than 1500 experiments using over 100 unselected human operators and several different random digital processors. "For the benchmark experiments, this REG is set to generate trials of 200 binary samples each, which are counted at a rate of 1000 per second. The protocol requires individual human operators, seated in front of the machine but having no physical contact with it, to accumulate prescribed equal size blocks of data under three interspersed states of intention: to achieve a higher number of bit counts [1's] than the theoretical mean (HI); to achieve a lower number of bit counts [1's] than the theoretical mean (LO); or not to influence the output, i.e. to establish a baseline (BL)" (Jahn et al, 1997, 245). The baseline (BL) meant that no human intention was being forced onto the REG, and therefore it was expected to generate numbers randomly.

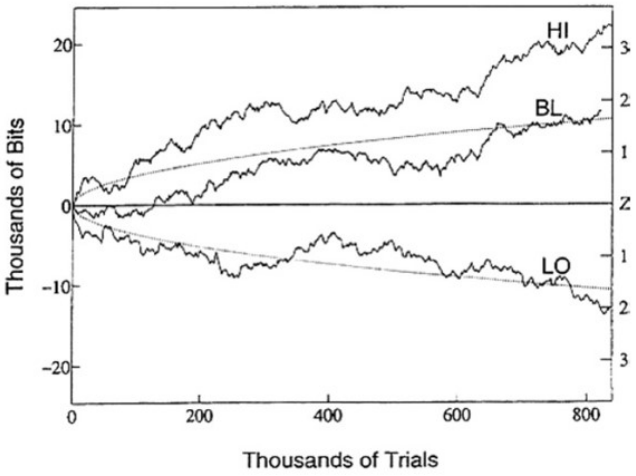

Figure 1 - Cumulative deviation graphs of benchmark REG results for HI, LO, and BL operator intentions. Parabolic envelopes are one-tail 95% confidence intervals around the theoretical chance mean. The scale on the right ordinate refers to the terminal z-scores (Jahn et al, 1997).

The Figure 1 above shows a theoretical mean, with numbers generated when there was no human intention involved (BL), and when human intention was focused on a larger number of

1's being generated (HI) and a lower number of 1's (LO). Although there have been a number of studies involving random number (or event) generators with similar results, this example was selected because it represented scientific researchers working in a reputable University engineering laboratory, conducting experiments over a lengthy period of time.

Placebo Effect – "the placebo effect is very well known, being replicated in many scientific studies. At the same time, its exact mechanisms still remain unknown. Quite a few hypothetical explanations for the placebo effect have been suggested, including faith, belief, hope, classical conditioning, conscious/subconscious expectation, endorphins, and the meaning response" (Mommaerts and Devroey, 2012, p.44). This next study is not to show that the placebo effect exists; that fact is undisputed in the medical discipline. Rather it is to look at an alternative view to its being relegated as merely a result of autosuggestion. It "examined brain function in depressed subjects receiving either active medication or placebo and sought to determine whether quantitative electroencephalography (QEEG) could detect differences in brain function between medication and placebo responders" (Leuchter et al, 2002, p.122). In this case, the researchers were not purposely studying the effects of conscious human intention.

51 subjects with major depression were enrolled in one of two 9-week, double-blind placebo-controlled treatment studies over a 24-month period, with each study focusing on a different active medication. The placebo was a physical portrayal of the medication itself, and was increased in line with the active medication. "Serial QEEG recordings were performed during the course of treatment. After 9 weeks, the blind was broken and subjects were classified as medication responders, placebo responders, medication nonresponders, or placebo nonresponders" (Leuchter et al, 2002, p.122). There was no difference in QEEG measures between the groups. "Placebo responders, however, showed a [statistically] significant increase in prefrontal cordance [measure of regional brain activity] starting early in treatment that was not seen in medication responders (who showed decreased cordance)" (Leuchter et al, 2002, p.122). This suggested that the placebo effect was not simply aping the mechanisms of the active medication, but had a different process of its own. Although the researchers were looking at ways to identify when someone was being healed as a result of the medication or medical procedure versus when they were healing themselves, the implications as to the presence of conscious human intention through the mind are equally valid.

Distance Healing - a randomized double-blind study was conducted to determine the effect of distant healing in 40 patients with advanced AIDS. "Subjects were pair-matched for age, CD4+ count, and number of AIDS-defining illnesses and randomly selected to either 10 weeks of DH [distance healing] treatment or a control group" (Sicher et al, 1998, p.356). The distance healers were all located in the United States and represented different healing methodologies. "At 6

months, a blind medical chart review found that treatment subjects acquired significantly fewer new AIDS-defining illnesses (0.1 versus 0.6 per patient, P = 0.04), had lower illness severity (severity score 0.8 versus 2.65, P = 0.03), and required significantly fewer doctor visits (9.2 versus 13.0, P = 0.01), fewer hospitalizations (0.15 versus 0.6, P= 0.04), and fewer days of hospitalization (0.5 versus 3.4, P= 0.04). Treated subjects also showed significantly improved mood compared with controls (Profile of Mood States score -26 versus 14, P= 0.02)" (Sicher et al, 1998, p.356). Although there was no significant difference between the CD4+ count of the groups, it was later reflected that it may not have been that substantial as an outcome predictor.

Violent Crime Reduction - from June to July, 1993, a group of approximately 4000 practitioners in Transcendental Meditation assembled in Washington, D.C. to conduct a controlled experiment in an attempt to reduce annually recurring cycles of violent crime rates, particularly homicide, rapes and assaults (HRA), through conscious intention of the practitioners. "Time series analysis of 1993 data, controlling for temperature, showed that HRA crimes dropped significantly during the Demonstration Project, corresponding with increases in the size of the group; the maximum decrease was 23.3% ($p < 2 \times 10^{-9}$) [24.6% using a longer baseline, with 1988–1993 data ($p < 3 \times 10^{-5}$)], coincident with the peak number of participants in the group during the final week of the assembly. When the same period in each of the five previous years was examined, no significant decreases in HRA crimes were found" (Hagelin, 1999, p.153). The results were published in Social Indicators Research, a respected, peer-reviewed, scientific journal.

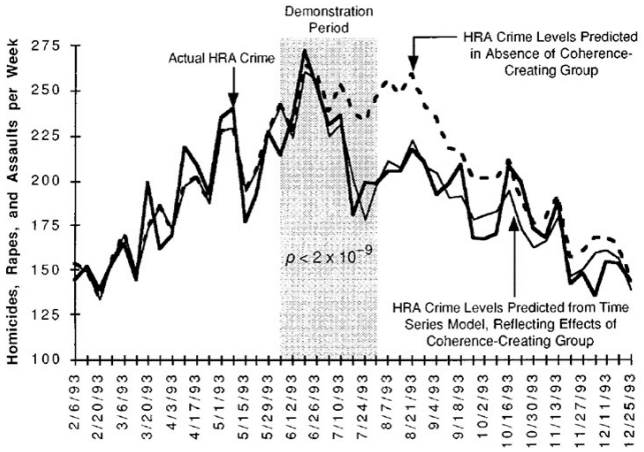

Figure 2 - Effects of the National Demonstration Project on 1993 HRA crime levels in Washington, D.C. (Hagelin, 1999)

Appreciative Inquiry – a study was conducted with 6 cross-functional teams of 6 participants each. "The purpose of this study was to determine if time-limited cross-functional teams socially constructed a perception of efficacy and cohesiveness through inquiry into best practices and peak experiences relative to teams focused on organizational problems" (Peelle, 2006, p.447). 3 of the teams used Appreciative Inquiry (AI) as their methodology and the other 3 teams used

Creative Problem Solving (CPS). In his descriptive approach to the study, and the use of Appreciative Inquiry, the author described teams building a collective efficacy and the use of hope and optimism leading to perseverance and motivation. In contrast, he described a problem solving approach as “efforts to define, clarify, and articulate the problem when addressing issues associated with human relationships foster a climate of hopelessness and despair while being irrelevant to solution discovery” (Peelle, 2006, p.449). The study, looking at group potency at different points of the team initiatives starting with task initiation (GP0) and ending at task completion (GP1), was completed because previous research had demonstrated that “group potency was both an antecedent and outcome of team performance” (Peelle, 2006, p.459). The results found that the teams using AI not only reported a statistically significant increase in group potency from task initiation to task completion, but also statistically significant levels of post task potency greater than the teams using CPS problem solving.

Primary Data - Improvement Initiatives

Participants in improvement initiatives from Canadian organizations were invited, through intermediary organizations, to answer quantitative questions about their last completed improvement initiative in an online survey. In addition, survey respondents were invited to participate in a further qualitative telephone interview to discuss their last completed improvement initiative in more detail. Although the primary data was obtained in a manner similar to the secondary data obtained about improvement projects, the nature of the questions were more aligned with attributes identified with conscious human intention.

The strategy for analysis of the quantitative primary data survey results was to look for statistically significant correlations between the dependant variable (question 12 - results of the improvement initiative) and independent variables (questions 4-27 related to attributes of human conscious intention). Correlations were used instead of regression because most of the quantitative questions were categorical rather than scale, and because the sample was not representative of the total population.

Questions 1-3 asked the respondents to provide demographical data about their organization (location, size, and sector), and questions 28-32 asked about their wish for voluntary involvement in a further telephone interview. The analysis of quantitative data would be further supplemented from reflections coming from the summaries of qualitative telephone interviews.

In all, 395 people viewed the survey, 98 started the survey, and 50 were shown as completing the survey. In a review of the 48 incomplete survey responses, 7 were added to the complete total because they answered all questions related to the survey question about conscious human intention in the workplace, but neglected to answer the last 5 questions (questions 28-

32) related to involvement in a telephone survey. In addition, a further 9 were added as complete because they answered at least all questions up to, and including, the dependent question (questions 1-12). Therefore, the sample size will vary per question, from 57 to 66.

Respondents from six out of ten provinces participated in the survey, the highest percentage coming from the two most populated provinces of Ontario and Quebec. Public and private sectors had almost equal numbers of respondents, and the size of the organizations ranged from small to large, with over half totalling 500+ employees.

Of the 23 independent questions (Q 4-11 and 13-27) related to conscious human intention and reviewed against the dependent question (Q12), representing the result of the improvement initiative, almost 70% (14) showed a statistically significant correlation. The independent questions were represented by two types of categorical data; nominal (counted but not ordered) and ordinal (counted and ordered), with questions 19 and 24 represented by a continuous scale.

Statistically Insignificant Correlations

The following independent survey questions did not have a statistically significant correlation to the dependent question (Q12) What percentage of the target was reached upon conclusion?

#	Survey Question
4	What best describes the significance of the improvement initiative?
5	What best describes your role in the improvement initiative?
7	How many people (management and otherwise) were involved in defining the objective/goal?
14	What best describes the system used to measure performance against the target?
15	Did the improvement initiative have a team?
16	How large was the improvement team (Team Leader and Team Members)?
17	What was the average % of team member's time dedicated to the improvement initiative?
21	How many people (excluding the improvement team) were affected by the improvement initiative?
24	What best describes the overall style of language used over the life of the initiative to communicate the improvement initiative, where negative talked about decreasing problems and positive talked about increasing strengths?

Figure 3 - Statistically Insignificant Survey Questions

Statistically Significant Correlations – Nominal Values

The following independent survey questions did have a statistically significant correlation to the dependent question (Q12) What percentage of the target was reached upon conclusion? These questions had a nominal value (counted by not ordered) of Yes or No assigned to the potential answers. Pearson Chi-Square Test was applied using a 95% confidence level where Alpha = .05.

Crosstabs Question 6 and 12 (dependent)

		Q6 - Did the improvement initiative have a defined objective?		Total
		Yes	No	
Q12 - What percentage of the target was reached upon conclusion?	≤50%	11	4	15
	51-75%	19	0	19
	76-99%	24	0	24
	100%	6	0	6
	100+%	1	1	2
Total		61	5	**66**

Chi-Square Test

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16.965	4	**.002**

Figure 4 - Crosstab Question 6 and 12 (dependent)

Question 6 (Figure 4) - the Asymp. Sig (2-sided) value of .002 for the Pearson Chi-Square test is less than Alpha = .05, showing a statistically significant relationship between the improvement initiative having a defined objective and the percentage of target reached upon conclusion. The crosstabs table supports this. It should be noted, however, that 1 of the 2 initiatives that surpassed 100% of the objective did not have a defined objective.

Crosstabs Question 10 and 12 (dependent)

		Q10 - Did the objective/goal have a measurable target?		Total
		Yes	No	
Q12 - What percentage of the target was reached upon completion?	≤50%	3	12	15
	51-75%	17	2	19
	76-99 %	24	0	24
	100%	6	0	6
	100+%	2	0	2
Total		52	14	**66**

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	40.932	4	**.000**

Figure 5 – Crosstabs Question 10 and 12 (dependent)

Question 10 (Figure 5) - the Asymp. Sig (2-sided) value of .000 for the Pearson Chi-Square test is less than Alpha = 0.5, showing there is a statistically significant relationship between the improvement initiative's objective having a measurable target and the percentage of target reached upon conclusion. The crosstabs table supports this, and is closely aligned with the results of the question about a defined objective. It is interesting to note, however, that while both respondents representing a completed target of 100+% answered yes to the question of having a measureable target, only one of those respondents stated that they had a defined objective.

Crosstabs Question 11 and 12 (dependent)

		Q11 - Was the measurable target accompanied by a measurable baseline?		Total
		Yes	No	
Q12 - What percentage of the target was reached upon conclusion?	≤50%	2	13	15
	51-75%	12	7	19
	76-99%	20	4	24
	100%	6	0	6
	100+%	1	1	2
Total		41	25	**66**

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	23.555	4	**.000**

Figure 6 - Crosstabs Question 11 and 12 (dependent)

Question 11 (Figure 6) - the Asymp. Sig (2-sided) value of .000 for the Pearson Chi-Square test is less than Alpha = .05, showing there is a statistically significant relationship between the target having a measurable baseline and the percentage of target reached upon conclusion. The crosstabs table supports this. This time, however, there is a higher frequency of respondents that

answered no to the question than the previous questions concerning a defined objective or measurable target, including 1 of the 2 initiatives that surpassed 100% at conclusion.

Statistically Significant Correlations – Ordinal Values

The following independent survey questions did have a statistically significant correlation to the dependent question (Q12) What percentage of the target was reached upon conclusion? These questions had an ordinal value (counted and ordered) representing categories assigned to the potential answers. Pearson Chi-Square and Spearman Correlation Tests were applied using a 95% confidence level where alpha = 0.05. This will provide additional support as to the direction the significance is applied.

Crosstabs Question 8 and 12 (dependent)

		Q8 - How clear (easy to perceive, understand, or interpret) would you say the objective/goal was?					
		Unclear	Slightly clear	Clear enough	Very clear	Extremely Clear	Total
Q12 - What percentage of the target was reached upon conclusion?	≤50%	2	5	4	2	2	15
	51-75%	3	2	8	5	1	19
	76-99%	0	1	7	15	1	24
	100%	0	0	3	1	2	6
	100+%	0	1	0	1	0	2
Total		5	9	22	24	6	**66**

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	28.711	16	**.026**

Symmetric Measures

		Value	Asymp. Std. Error	Approx. T	Approx. Sig.
Ordinal by Ordinal	Spearman Correlation	**.335**	.124	2.848	**.006**

Figure 7 - Crosstabs Question 8 and 12 (dependent)

Question 8 (Figure 7) - since the Asymp. Sig (2-sided) value of .026 for the Pearson Chi-Square test is less than Alpha = .05, there is a statistically significant relationship between the clarity of the objective/goal and the percentage of target reached upon conclusion. The crosstabs table supports this, although there are still several respondents who answered extremely clear and yet had poor results, and 1 respondent who answered only slightly clear yet had a result that surpassed 100%. The Spearman Correlation Approx. Sig of .006 is also less than the Alpha = .05 stating statistical significance with a positive value of .335 that supports clearer objective giving better results.

Crosstabs Question 13 and 12 (dependent)

		Q13 - How often was the measurable target monitored?					
		Hardly Ever	Monthly	Weekly	Daily	Constantly	Total
Q12 - What percentage of the target was reached upon conclusion?	≤50%	7	5	2	0	1	15
	51-75%	4	12	1	0	2	19
	76-99%	1	12	5	3	3	24
	100%	0	1	2	0	3	6
	100+%	0	0	2	0	0	2
Total		12	30	12	3	9	**66**

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	36.919	16	**.002**

Symmetric Measures

		Value	Asymp. Std. Error	Approx. T	Approx. Sig.
Ordinal by Ordinal	Spearman Correlation	**.495**	.100	4.558	**.000**

Figure 8 - Crosstabs Question 13 and 12 (dependent)

Question 13 (Figure 8) - since the Asymp. Sig (2-sided) value of .002 for the Pearson Chi-Square test is less than Alpha = .05, there is a statistically significant relationship between how often the measurable target was monitored and the percentage of

target reached upon conclusion. The crosstabs table supports this. The Spearman Correlation Approx. Sig of .000 is also less than the Alpha = .05 stating statistical significance with a positive value of .495 that supports monitoring more often gives better results.

Crosstabs Question 18 and 12 (dependent)

		Q18 - How often did the improvement team meet?					
		Hardly ever	Monthly	Weekly	Daily	Constantly	Total
Q12 - What percentage of the target was reached upon conclusion?	≤50%	2	3	7	0	3	15
	51-75%	0	11	4	0	3	18
	76-99%	0	3	12	1	6	22
	100%	0	0	4	1	1	6
	100+%	0	0	0	1	1	2
Total		2	17	27	3	14	**63**

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	35.511[a]	16	**.003**

Symmetric Measures

		Value	Asymp. Std. Error	Approx. T	Approx. Sig.
Ordinal by Ordinal	Spearman Correlation	**.319**	.113	2.626	**.011**

Figure 9 - Crosstabs Question 18 and 12 (dependent)

Question 18 (Figure 9) - since the Asymp. Sig (2-sided) value of .003 for the Pearson Chi-Square test is less than Alpha = .05, there is a statistically significant relationship between how often the improvement team met and the percentage of target reached upon conclusion. The crosstabs table appears weighted slightly in favour of the more the team met, the better the results, although there are again a number of teams that met constantly yet still had poor results. It is interesting to note that those who achieved 100% met from weekly to constantly, those who surpassed 100% met daily or constantly. The Spearman Correlation Approx. Sig of .011 is also less than the Alpha = .05 stating statistical significance with a positive value of .319 that supports the team meeting more often gives better results.

Crosstabs Question 20 and 12 (dependent)

			Q20 - How would you best describe the overall level of energy and enthusiasm among improvement team members?				
		Extremely Uninterested	Low	Medium	High	Extremely Enthusiastic	Total
Q12 - What percentage of the target was reached upon conclusion?	≤50%	3	1	10	1	0	15
	51-75%	0	0	13	5	0	18
	76-99%	0	0	10	12	0	22
	100%	0	0	2	4	0	6
	100+%	0	0	0	2	0	2
Total		3	1	35	24	0	63

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	25.334	12	**.013**

Symmetric Measures

		Value	Asymp. Std. Error	Approx. T	Approx. Sig.
Ordinal by Ordinal	Spearman Correlation	**.536**	.093	4.952	**.000**

Figure 10 - Crosstabs Question 20 and 12 (dependent)

Question 20 (Figure 10) - since the Asymp. Sig (2-sided) value of .013 for the Pearson Chi-Square test is less than Alpha = .05, there is a statistically significant relationship between the level of energy and enthusiasm within the improvement team and the percentage of target reached upon conclusion. The crosstabs table appears weighted in favour of the energy and enthusiasm of the team, the better the results. Although there are still a number of teams that had medium to high energy and enthusiasm and yet still had poor results, the teams that reached and surpassed 100% were all in the medium to high categories. The Spearman Correlation Approx. Sig of .000 is also less than the Alpha = .05

stating statistical significance with a positive value of .536 that supports higher energy and enthusiasm of the team gives better results.

Crosstabs Question 22 and 12 (dependent)

		What best describes the level of engagement with the people affected by the improvement initiative?					
		Little to No Engagement	Low	Medium	High	Fully Engaged	Total
Q12 - What percentage of the target was reached upon conclusion?	≤50%	4	3	3	2	0	12
	51-75%	1	3	9	4	0	17
	76-99%	0	4	11	5	0	20
	100%	0	1	2	3	0	6
	100+%	0	0	1	0	1	2
Total		5	11	26	14	1	**57**

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	43.306	16	**.000**

Symmetric Measures

		Value	Asymp. Std. Error	Approx. T	Approx. Sig.
Ordinal by Ordinal	Spearman Correlation	**.342**	.130	2.699	**.009**
N of Valid Cases		57			

Figure 11 - Crosstabs Question 22 and 12 (dependent)

Question 22 (Figure 11) - since the Asymp. Sig (2-sided) value of .000 for the Pearson Chi-Square test is less than Alpha = .05, there is a statistically significant relationship between the level of engagement with stakeholders and the percentage of target reached upon conclusion. The crosstabs table reflects this and the Spearman Correlation Approx. Sig of .009, also less than the Alpha = .05 stating statistical significance with a positive value of .342 that supports higher engagement of stakeholders gives better results.

Crosstabs Question 23 and 12 (dependent)

		What best describes how often progress was communicated to the people affected by the improvement initiative?					
		Little to None	Monthly	Weekly	Daily	Constant	Total
Q12 - What percentage of the target was reached upon conclusion?	≤50%	6	5	1	0	0	12
	51-75%	9	7	0	0	1	17
	76-99%	3	12	4	0	1	20
	100%	1	1	3	0	1	6
	100+%	0	0	1	0	1	2
Total		19	25	9	0	4	**57**

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	25.574	12	**.012**

Symmetric Measures

		Value	Asymp. Std. Error	Approx. T	Approx. Sig.
Ordinal by Ordinal	Spearman Correlation	**.477**	.113	4.023	**.000**

Figure 12 - Crosstabs Question 23 and 12 (dependent)

Question 23 (Figure 12) - since the Asymp. Sig (2-sided) value of .012 for the Pearson Chi-Square test is less than Alpha = .05, there is a statistically significant relationship between how often progress was communicated to stakeholders and the percentage of target reached upon conclusion. The crosstabs table shows a visual weighting of poorer results and less communication versus higher results with higher communication. The Spearman Correlation Approx. Sig of .000 is also less than the Alpha = .05 stating statistical significance with a positive value of .477 that also supports monitoring more often gives better results.

Crosstabs Question 25 and 12 (dependent)

		Q25 - How would you best describe the overall level of agreement (management, improvement team, stakeholders) during the improvement initiative?					
		Always Smooth	Mostly Smooth	Balance	Mostly Chaotic	Always Chaotic	Total
Q12 - What percentage of the target was reached upon conclusion?	≤50%	0	2	4	4	2	12
	51-75%	1	5	9	2	0	17
	76-99%	0	11	9	0	0	20
	100%	0	4	2	0	0	6
	100+%	0	1	1	0	0	2
Total		1	23	25	6	2	57

Symmetric Measures

		Value	Asymp. Std. Error	Approx. T	Approx. Sig.
Ordinal by Ordinal	Spearman Correlation	**-.431**	.116	-3.545	**.001**

Figure 13 - Crosstabs Question 25 and 12 (dependent)

Question 25 (Figure 13) - in this case the Pearson Chi-Square test did not show a statistically significant relationship between the level of agreement between all parties involved and the percentage of target reached upon conclusion. The crosstabs table appears weighted in favour of the more balanced or smoother an initiative was, the better the results, and where there was chaos, it was with the initiatives that had poor results. The Spearman Correlation Approx. Sig of .001, however, is less than the Alpha = .05 stating statistical significance with a negative value of .342 supporting the notion that a smoother improvement initiative gives better results.

Crosstabs Question 26 and 12 (dependent)

		Q26 - What best describes the use of Change Management methodologies?					
		None	Informal Use	Some Formal Use	Formal Use at Key Times	Complete Use of Model	Total
Q12 - What percentage of the target was reached upon conclusion?	≤50%	3	5	4	0	0	12
	51-75%	0	5	9	2	1	17
	76-99%	0	4	9	7	0	20
	100%	0	0	2	4	0	6
	100+%	0	0	0	1	1	2
Total		3	14	24	14	2	57

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	40.414	16	**.001**

Symmetric Measures

		Value	Asymp. Std. Error	Approx. T	Approx. Sig.
Ordinal by Ordinal	Spearman Correlation	**.563**	.094	5.050	**.000**

Figure 14 - Crosstabs Question 26 and 12 (dependent)

Question 26 (Figure 14) - since the Asymp. Sig (2-sided) value of .001 for the Pearson Chi-Square test is less than Alpha = .05, there is a statistically significant relationship between the use of change management methodologies and the percentage of target reached upon conclusion. The crosstabs table appears weighted in favour of the more formal use of change management methodologies, the better the results. Although there were respondents who did not achieve 100% that were dispersed through all categories, those that reached and surpassed 100% were all in the some formal use to complete use of a model categories. The Spearman Correlation Approx. Sig of .000 is also less than the Alpha = .05 stating statistical significance with a positive value of .563 that supports formal use of change management gives better results.

Crosstabs Question 27 and 12 (dependent)

		Q27 - What best describes the use of Appreciative Inquiry methodologies to engage stakeholders?					
		None	Informal Use	Some Formal Use	Formal Use at Key Times	Complete Use of Model	Total
Q12 - What percentage of the target was reached upon conclusion?	≤50%	6	5	1	0	0	12
	51-75%	8	4	4	1	0	17
	76-99%	7	4	7	2	0	20
	100%	1	1	2	2	0	6
	100+%	1	0	0	0	1	2
Total		23	14	14	5	1	**57**

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	39.650	16	**.001**

Symmetric Measures

		Value	Asymp. Std. Error	Approx. T	Approx. Sig.
Ordinal by Ordinal	Spearman Correlation	**.316**	.124	2.467	**.017**

Figure 15 - Crosstabs Question 27 and 12 (dependent)

Question 27 (Figure 15) - Since the Asymp. Sig (2-sided) value of .001 for the Pearson Chi-Square test is less than Alpha = .05, there is a statistically significant relationship between the use of appreciative inquiry methodologies and the percentage of target reached upon conclusion. The crosstabs table appears slightly weighted in favour of the more formal use of appreciative inquiry methodologies, the better the results, although the respondents who achieved 100% were dispersed through the categories from none to some formal use at key times, and those that surpassed 100% were equally divided between none and complete use of a model. The Spearman Correlation Approx. Sig of .017 is also less than the Alpha = .05 stating statistical significance with a positive value of .316 that supports formal use of appreciative inquiry gives better results.

Statistically Significant Correlations – Scale Values

The following independent survey questions did have a statistically significant correlation to the dependent question (Q12) What percentage of the target was reached upon conclusion? These questions had a continuous scale assigned to the potential answers. Pearson Correlation Tests was applied using a 95% confidence level where Alpha = 0.05.

Correlations Question 19 and 12 (dependent)

Descriptive Statistics

	Mean	Std. Deviation	N
Q12 - What percentage of the target was reached upon conclusion?	2.41	1.037	**66**
Q19 – What were the attitudes and style of language displayed among improvement team members?	67.63	20.315	**62**

Correlations

		Q12 - What percentage of the target was reached upon conclusion?	Q19 – What were the attitudes and style of language displayed among improvement team members?
Q12 - What percentage of the target was reached upon conclusion?	Pearson Correlation	1	**.398**
	Sig. (2-tailed)		**.001**
Q19 – What were the attitudes and style of language displayed among improvement team members?	Pearson Correlation	**.398**	1
	Sig. (2-tailed)	**.001**	

Figure 16 - Correlations Question 19 and 12 (dependent)

Question 19 (Figure 16) - the Sig (2-sided) value of .001 is also less than the Alpha = .05 stating statistical significance with a positive Pearson Correlation of .398 that supports positive attitudes and style of language displayed by team members gives better results. Where the scale was negative = 0 and positive = 100, a mean of 67.63 supports the notion that the overall response was more positive in nature, but the absence of a value table restricts any visual interpretation of the data.

Correlations Question 24 and 12 (dependent)

Descriptive Statistics

	Mean	Std. Deviation	N
Q12 - What percentage of the target was reached upon conclusion?	2.41	1.037	66
Q24 - What was the style of language used to communicate the improvement initiative?	62.38	23.014	56

Correlations

		Q12 - What percentage of the target was reached upon conclusion?	Q24 - What was the style of language used to communicate the improvement initiative?
Q12 - What percentage of the target was reached upon conclusion?	Pearson Correlation	1	**.301**
	Sig. (2-tailed)		**.024**
Q24 - What was the style of language used to communicate the improvement initiative?	Pearson Correlation	**.301**	1
	Sig. (2-tailed)	**.024**	

Figure 17 - Correlations Question 24 and 12 (dependent)

Question 24 (Figure 17) - the Sig (2-sided) value of .024 is also less than the Alpha = .05 stating statistical significance with a positive Pearson Correlation of .301 that supports a positive style of language used to communicate the improvement initiative gives better results. Where the scale was negative = 0 and positive = 100, a mean of 62.38 supports the notion that the overall response was more positive in nature, but the absence of a value table restricts any visual interpretation of the data.

Telephone Interviews – Qualitative Data

Questions number 28-32 of the on-line survey invited respondents to be considered for a further telephone interview, and to provide their contact information if they wished to be contacted. A total of 5 respondents were selected and scheduled for the telephone interview, representing approximately 10% of the on-line survey population. Each interview was scheduled for 30 minutes and respondents were asked a series of questions about why they felt the improvement initiative results were the way they were, their overall feelings about the initiative and how it went, any extenuating circumstances that led to the result, how different (or similar) this improvement initiative was from others they have experienced, and any additional thoughts they felt were pertinent to the interview. Concluding thoughts of the Interview summaries are below.

Respondent ID 13862445 - this seemed to be a case of a well-managed, 100% successful improvement initiative. Although the language of the objective may have been problem-based, this was off-set by the high levels of strength-based language and attitudes of the project team and communications provided to stakeholders. The high level of collaboration and engagement of internal and external stakeholders would also seem to have added to a more comprehensive and collective view of the new reality the improvement initiative achieved.

Respondent ID 12956920 - the intention seemed to be lacking in clarity and resolve during the life of the initiative. Even when the project team did have the support of management and the external pressure of proposed regulation, there was little to no engagement or communications to the larger audience up until the internal support and external pressure dissipated, and monitoring of progress seemed to be loose. In addition, the participant offered that the requirement to assess the feasibility of their own project after they had completed so much

design work left the project team members with a negative feeling about the initiative. However, even taking the 25% reduction in their workforce into consideration does not necessitate removal of the need for the discipline that an efficient management system might bring to an organization.

Respondent ID 14410519 - the intention seemed to be moving during the life of the initiative, right up until conclusion. The fact that there was constant conflict and chaos didn't seem to reflect upon the final result, and seemed to provide for a poor work environment. The result itself, however, may have been a false negative, since the less than 100% completion at the conclusion of the initiative was based on new definitions, which is unfair. Lastly, the thought of chaos being required to effect great change seemed to have some substance when results of the overall program were viewed by an appropriately discerning outside source.

Respondent ID 14421756 - although the original objective was stated as clear, it was only in the minds of the originators, without inclusion from the groups charged with creating the reality. This, in addition to the fact that the groups charged with creating the reality were invited to confirm the original objective, caused the supposed clarity of the objective to become extremely unclear, adding to the chances of failure to meet the improvement target.

Respondent ID 13344621 - although the original objective target was met, that target was changed during the life of the improvement initiative, labeling it as a failure. That observation stated, it seemed that, had better managed project management processes and professional management overall been present, even the changed, more aggressive target might have been met, even though this was an enterprise wide project and more complex in nature. The effect of problem-based language on the result of the initiative is an unknown, but was felt by the respondent to be a contributing factor.

Discussion and Conclusions

Summary

The primary data analysis showed that almost 70% of the questions attributed to conscious human intention had a statistically significant relationship with the dependent question which represented the final results of the improvement initiatives. Of the 11 questions that represented rising values through categories and scales, all but 1 stated that the statistical significance traveled in the direction supported by the theoretical research. The exception concerned the notion that chaos is necessary for substantial change and that harmony causes entropy. In this question, the data pointed to a smoother relational environment being more conducive to success. This result, however, was offset by a telephone interview discussion with respondent ID 14410519. They cited a chaotic environment during the life of the initiative and deemed their improvement initiative a failure, even though the target changed halfway through and the original target was met, and an external assessment of their improvement labeled it best in class.

There were some conflicting results found in the primary data analysis. It was statistically significant with the outcome that the initiative had a clear and easy to understand strength-based objective with a measurable baseline and target that was monitored often, but whether the monitoring was directly by a human, or automatically by machine or software, didn't seem to matter; neither did the significance of the initiative. Whether there was a team at all wasn't significant either, but how often it met, its energy, enthusiasm, attitude and language was. It may be that respondents didn't see themselves as a team, but more as an informal group, or even a facilitator, and that regardless, they met often with group members and gauged their levels of energy, enthusiasm, attitude and language. It was significant that stakeholders were engaged, and that progress was communicated to them often, but whether the style of communication was problem-based or strength-based didn't matter, nor did the number of stakeholders. Finally, it was significant for the success of the initiative that things went smoothly, and that formal change management and appreciative inquiry methodologies were used.

Of the 66 survey responses accepted as completed for purposes of analysis, 88% stated that they did not meet 100% of their objective. This is even higher than the 59% - 61% failure rate findings of both the KPMG and IBM studies introduced in Analysis and Results. Reason for failure may have been a factor. In the KPMG study, improvement projects cancelled or deferred were excluded from their survey, though the IBM study doesn't mention the same exclusion. The primary data survey simply asked if the respondents felt their improvement initiative met the objective's defined target, without any stated exceptions. Further telephone interviews identified

that reasons for failure included management's cancelling of the initiative (Respondent ID 12956920), and changing of the target partway through the initiative (Respondent ID 14410519, 14421756 and 13344621). Because the question that asked how much of the objective's target was reached was the dependent question against which the independent questions were evaluated, the perception of success and failure is critical.

An analysis of a secondary data study concerning the use of Appreciative Inquiry (AI) as an improvement methodology showed very positive results (Peelle, 2006). Although the study was not directly linked to improvement initiative improvements, it was included in the secondary data analysis because it showed statistically significant levels of group potency (when teams move into action) over a problem solving methodology, and linked group potency to team performance (improvement initiative results). The author also referred to what the teams were doing as socially constructing an environment of efficacy, and the attributes that are ascribed to AI fit with the attributes of conscious human intention, especially those concerning levels of determination, resolve, will, perseverance, feelings and emotion, desire, and of course, nature of the style of language used.

Theoretical Implications

Although the primary data analysis results were not definitive in relating to the research question, several contributions were made by this research study overall. The literature review has shown causal linkages between newly expanding views of our natural world, social theories and emerging management theories and practices such as Complex Adaptive Systems, Organizational Development, Appreciative Inquiry and Systems and Complexity Theory. Secondary data analysis of these causal linkages show evidence of conscious human intention and the potential for its application in management theory and improvement initiative practices. It has also served to ask the pertinent questions and bring up the elephant in the room. Primary data analysis show the limitations of using surveys and interviews of past improvement initiatives and point to recommendations for further research strategies that can be made more robust, inclusive and definitive.

Limitations

Primary Data – there were limitations to the methodologies used to collect primary data for the purpose of supporting the primary research question of how conscious human intention relates to success of improvement initiatives in Canadian organizations, and by association, the sub-question about what effect the perceived attributes have as well. The quantitative surveys and qualitative interviews were decided upon for two reasons; because they represented traditional ways that improvement initiatives were studied, and because conducting either large random

surveys representative of the population, or controlled experiments in the rigorous scientific style would have been outside the level of resources (cost and time) available to the researcher.

These limitations included the fact that the improvement initiatives being studied were already completed, and that the researcher was at the mercy of the survey respondent's singular memory of the event, their understanding and perception of the survey questions, and any conscious or subconscious agenda they may have had when answering the questions. These inconsistencies were made prevalent when conducting the follow-up telephone interviews with a small sample of survey respondents. The researcher was cognizant as well about adding in their own level of bias to the results, especially when summarizing the views of the respondents during the telephone interviews. This potential bias can be presumed when looking at the contradictions between the previous improvement initiative studies conducted by large credible consulting firms and associations (see Analysis and Results). It is easy to imagine the motivation for both KPMG and IBM, as provider of professional services to corporations, to show a result where improvement initiatives continue to fail at an alarming rate, and those of the Project Management Institute (PMI), as an association promoting use of project management methods, to show a contradictory high level of success when project teams were involved, even though their data was mined from the study by an assumedly impartial third party.

Secondary Data – there is a significant lack of accepted credible studies for conscious human intention at the social and organizational levels. The research question is a contentious one that has had little prior study applied to it directly related to management theory as well. This lack has forced the research to take on a strategy of showing complementary linkages between the theories and studies of other disciplines in order to show the potential for causation in management practices, particularly practices related to improvement initiatives. Even studies pertaining to Appreciative Inquiry, although suitably connected as a methodology for change management and improvement, only represent a link between the views of social constructionism and emerging management theories, and don't subscribe directly either to the quantum physics views of the natural world or the potential effects of conscious human intention on improvement initiatives. There was a reluctance to include a study, representing a psychological experiment conducted in a fake prison constructed at Stanford University (Haney et al, 1973), because of its secondary nature to the research question. The violence that erupted during the facilitated role playing of college students as prisoners and prison guards would have served to suggest why there has been a disinclination to conduct future meaningful social constructionism experiments that might show changes to our ontological world.

Level of Collaboration – in addition to the lack of previous research in this area, there is also a defined lack of acceptance from established research communities for the need to seriously

study the unexplained phenomena raised in the scientific experiments at the micro level, and how it might apply not only to the medical field, but to social constructionism and to management theory and practices as well. By refusing to consider this phenomenon as a worthy research subject, and electing to discredit or shut out other reputable researchers who are doing so, it leaves what available work has been done to be published outside of peer-reviewed periodicals and serves to drive results into the arms of whatever sensationalist publication will have them, thereby enhancing a self-fulfilling prophecy. This has caused the researcher to have to resort to sometimes referencing books and articles that may be considered marginal, and which may be discredited by others, rightly or wrongly.

Examples of these are the books by Lynne McTaggart (2007, 2008) on human intention, even though the author cites peer reviewed, reputable experiments, and her books are cited by others in peer reviewed periodicals (Energy Psychology, Volume 5, Issue 1), Bruce Lipton (2008), whose book has also been cited by others in peer reviewed periodicals (Medical Hypotheses, Volume 73, Issue 5, November 2009, Pages 770-780), and a study to support the notion of conscious human intention at the social level; the first representing a large scale controlled experiment in Washington, D. C. where 4000 practitioners of transcendental meditation succeeded in statistically lowering a cyclical trend of violent crime during a two month period (Hagelin et al, 1999), due to its questioned credibility by detractors and lack of repeatability, regardless of its stated use of scientifically controlled experimental methodologies and statistical testing, its co-authorship by representatives of several respectable universities, and its acceptance into a seemingly credible journal (Social Indicators Research journal) which is published by Springer and edited by professors at reputable universities.

This can cause a lack of credible studies to show linkages between the phenomenon of conscious human intention and its effects in scientific, medical, social and organizational environments because there may be stigmas attached to conducting them. The authors of a randomized double-blind study of the effect of distant healing in a population with advanced AIDS made a comment in their research paper that agreed with a recent editorial that had called for "the scientific community to stop giving alternative medicine a free ride", and stated “now is the time for scientists to be courageous, as well as careful and precise, to help separate truth from hope and fact from myth” (Sicher et al, 1998, p.356).

Directions for Future Research

Due to the data collection and analysis limitations identified from conducting surveys and interviews of completed improvement initiatives, and the separation of common attributes shared by conscious human intention and process improvement best practice from the results

of the primary survey data, the researcher has the following recommendations for future research.

In order to definitively show a relationship between conscious human intention and improvement initiative results, future research should adopt the rigor of scientifically controlled studies, using double blind and control group methodologies, with statistical testing for significance of results. Expectations for what would be considered success of an improvement initiative would need to be clear and equally applied to all groups. The randomly selected control group would represent existing knowledge, experience, and preference for improvement initiative methodologies used.

The traditional process improvement group would be randomly selected based on similar levels of experience and facilitated using agreed upon best practice improvement methodologies. The conscious human intention group would replicate the traditional process improvement group with additional training and use of focused intention methodologies, including meditation techniques. The results of the improvement initiatives would be assessed by a common team, applying the same agreed upon criteria to all improvement initiatives. Results of the assessments would be all be treated to the same analysis process to look for significant statistical differences between the three groups. Depending upon the level of knowledge participants were given about the study, the Hawthorne Effect may have to be presumed, but should be equally present in all groups.

Reflections

The study did not fulfill all of its objectives in conclusively answering all of the research question(s). Although existing theories and evidence shown in Literature Review and Theory and Analysis and Results meet the needs of the research sub-question suggesting that the level and nature of conscious human intention in an outcome can affect its success, and although attributes of conscious human intention have been identified from previous literature to meet the needs of the sub-question concerning those essential to the its level of effect on the outcome, the effects of the attributes themselves (and conscious human intention as a whole) on the outcome of improvement initiatives have not been substantiated.

The lack of conclusive evidence from the primary data was not totally unexpected. This is the first time that improvement initiatives are being studied for relationships with conscious human intention, and the decision to link the data collection methodologies to past improvement initiative studies was deliberate, to test whether this method would be appropriate to understanding the relationship between attributes of conscious human intention and the final results of improvement initiatives.

What was unexpected was the low number of completed surveys appropriate for primary data analysis. Although a larger sample size would still have not been representative of the population of improvement initiatives in Canadian organizations, it may have provided more insight into the research question and reduced the number of contradictions found in the results. What was also unexpected was the mainstream researcher's general reluctance to accept phenomenon contrary to our classical view of the natural world, and the widespread body of work, accepted or not, by accredited practitioners, despite the stigma placed on them. This includes the general reluctance to consider the phenomena for future serious study.

There were many lessons learned from this research project. The first was the inadequacy of surveys and interviews of completed improvement initiatives being an appropriate research methodology for establishing conscious human intention as a valid phenomenon that may be used to improve the rate of success for improvement initiatives. It is now clear that only through the use and rigor of established scientific study methods with control groups, will researchers be able to separate unseen attributes of conscious human intention from activities that constitute process improvement best practice. The use of these methods will also provide credibility to the research process, especially if the studies are open, inclusive, and peer reviewed by reputable parties. Other lessons learned include the fact that distinct clarity is needed to be established on what exactly represents a successful improvement initiative, so that this can be used as a benchmark against which future studies can be assessed, and what specifically is different between the attributes of conscious human intention and the expected attributes of process improvement best practice, so that the level of influence exerted by conscious human intention can be substantiated.

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