

Early Social Innovations: Belief Systems

James R. Simms

Retired, 9405 Elizabeth Court, Fulton, Maryland USA, jrsimms@juno.com

Abstract

This paper addresses the next phase in the development of living systems science, which includes the science of society. The principles of this science have been developed. The next phase of the science is an elaboration of the social innovation determinant of the science of society. Early social innovations are belief systems. The basic phenomenon causing the need for belief systems is the increased size of the human brain since the emergence of Homo sapiens. The large brain resulted in two fundamental phenomena, the concepts of mortality and rational behaviors. The concept of mortality and the genetically determined need for survival resulted in the concept of an after life (immortality). Some early humans invented belief systems based on the concept of an afterlife. The concept of rational behavior (reason for things that happen) resulted in the belief that some thing or things cause events to occur. It is hypothesized that the mortality and rationality phenomena resulted in the innovation of belief system and the religions to implement these belief systems. These hypotheses are tested using artifact of ancient humans and recent primitive humans.

Keywords: Living systems science, Science of society, Belief systems, Social innovations

Introduction

The first phases in the development of living systems science have been completed. Fundamental phenomena have been identified, the subjects of the science have been identified and classified, objective measures of fundamental phenomena have been established, and relationships among phenomena have been established.

An important fundamental phenomenon is that living things are part of the natural order (systems like atoms, molecules, and planetary systems). The acceptance of this phenomenon was long and tortuous for both nonliving and living systems. Astronomy and physics went through the theological and metaphysical stages before they were accepted as the natural order of things.

Galileo has just recently been returned to the good graces of the Catholic Church. August Comte wrote that a science of society would pass through three stages (theological, metaphysical, and the positive). James Grier Miller (1999) cites Ludwig von Bertalanffy for his work in getting living systems through the theological stage. Miller writes "The view that living things are similar to other parts of the physical world, differing only in their complexity, was explicitly stated in the early years of the twentieth century by the biologist Ludwig von Bertalanffy. This idea could not be published until the end of the war in Europe in the 1940s.

Von Bertalanffy was strongly opposed to vitalism, the theory current among biologists at the time that life could only be explained by recourse to a "vital principle" or God. He considered living things to be a part of the natural order, "systems" like atoms and molecules and planetary systems. Systems were described as being made up of a number of interrelated and interdependent parts, but because of the interrelations, the total system became more than the sum of those parts".

James Grier Miller (1978) brought living systems science through the next phase. He identified the subjects of the science and classified the subjects (he invented the science). His classification of living systems is; cell, organ, organism, group, organization, society, and supranational levels. He also identified the structures and processes of these systems. He defined the subjects of the science as concrete systems that process matter-energy and information.

Objective measures of living systems' fundamental phenomena have been developed. All concrete system, both nonliving and living, have a capacity to direct energy, which can be measured (Simms, 1971). The behaviors of living systems can be observed and measured in terms of the energy used during a behavior (Simms, 1983). Information is a fundamental phenomenon of living systems and can be observed and measured by the behavior it causes (Simms, 1996, 1999, and 2006). A unit of measure for the fundamental energy used by living systems has been established (Simms, 2006). Knowledge is a fundamental phenomenon of living systems. A unit of measure for knowledge has been established (Simms, 2006b).

Relationships among the fundamental phenomena of living systems have been developed. The relationships for cells, organs, and organisms are developed (Simms, 1999). The relationships for the group and society levels have recently been developed (Simms, 2006b). In addition, the determinants of the behaviors of recent humans have been identified. These determinants are technical and social innovations.

Culmination of the research described above result in the principles of living systems science. These principles provide the foundation upon which a living systems science (including a science of society) can be erected. These principles are built upon the preceding natural sciences and are equivalent to those of other natural sciences such as physics, chemistry and biology.

The next phase in the development of a living systems science is to address the early stages of a science of society. Because human societies are the result of social and technical innovation, this next phase of research starts with early innovations. Early social innovations were selected as a starting point.

The word *innovation* is used in its usual meaning (1) the introduction of something new, and (2) a new idea, method, or device. Innovations are based on inventions and discoveries. The word *invention* means (1) to think up or imagine, and (2) to produce (as something useful) for the first time through the use or imagination or of ingenious thinking and experiment. The word *discover* means (1) to make known or visible, and (2) to obtain sight or knowledge. The act of invention, like many other human activities is difficult to define precisely. The distinction often made between invention and discovery is not logically justifiable. For example, the great advance which primitive man made in the first use of pottery may be viewed either as the discovery of certain properties of burnt clay or as an invention of forming and hardening clay materials into valuable utensils. Most cases of inventive progress include both an element of invention and an element of discovery.

The invention/discovery process typically starts with a real or perceived need. Invention proceeds when inventors identify or imagine perceived facts that address a perceived need.

Primitive people had few facts with which to work (their understanding of their environment was minimal) Their inventions could only be based on limited knowledge about their environment.

Fundamental Phenomena

The search for fundamental phenomena underlying early social innovation was based on the hypothesis that as the human brain increased in size and capability, the concepts of mortality and rationality emerged. The time when these concepts emerged is probably unknowable because of the lack of artifacts associated with these phenomena. The time when humans were capable of symbolic thought (based on funeral rites with artifact that prepared the deceased for an afterlife) range from 50,000 to 350,000 years ago. The exact time is not important for our purposes. The central concept is that humans understood the phenomenon of mortality and invented ways to address mortality.

The universal phenomenon of mortality and humans' understanding of this phenomenon make it necessary for humans to have a belief system with respect to mortality. Possible beliefs range from there is an afterlife to there is no afterlife. Early belief in an afterlife is verified by artifacts that would help an individual to live in an afterlife. Artifacts are not available to support the concept of no afterlife beliefs. The phenomenon of humans' innate desire for survival create a need for the invention of an afterlife and the belief in an afterlife. The almost universal belief in an afterlife, as indicated by the billions of people alive today that believe in an afterlife, is a compelling argument that humans have a need for a belief in an afterlife.

A large human brain resulted in another phenomenon, a belief in cause-and-effect. Humans can observe cause-and-effect phenomena in their environment and acquire the belief that there is a rational cause-and-effect for everything. The belief in rationality may extend to events for which there in no apparent cause. Religions were invented to provide a cause for which there were no readily observable cause-and-effect reason.

Need for Belief System Innovations

One need for belief system innovations is the understanding of mortality that was caused by the increased size of the human brain. From a living systems science perspective, the increased structure of the brain provided an ability to know they were going to die and that events happen for a reason. The knowledge of mortality and the genetically determined need for survival resulted in the human need for immortality. This fundamental need for immortality resulted in the innovation of an afterlife. Afterlife is typically designed so that it can not be proved or disproved, but is believable.

Another need for belief systems innovations is the rationality phenomenon that was also caused by the increased size of the human brain. From a living systems perspective, the increased structure of the brain provided an ability to know that they can cause things to happen. That is, a cause-and-effect phenomenon. A large brain also provided an ability to believe there is a cause and effect for everything they observe. This belief in rationality provides a need for the innovation of a belief systems to explain (make rational) events which they do not cause but had to be caused by something. This need for rationality typically resulted in the innovation of some supernatural thing or things.

Early Innovations

Living systems science can be used to analyze the relation between social innovations and early belief systems. Knowledge of the existence of early belief systems is based on artifacts that imply behaviors that result in these artifacts. For example, the existence of tools, such as stone axes found with human remains, were used to imply that early humans such as Neanderthal man and Cro-Magnon, buried their dead with tools and therefore had some kind of concept of life after death. It is inferred that those early humans had knowledge of mortality that resulted in burial of the departed with tools necessary for an afterlife. Early humans invented primitive religions to address their need for an afterlife.

Primitive humans had very limited knowledge of their environment and the events taking place (behaviors) in the environment. It is hypothesized that because the human brain structure was sufficiently large as to need rational behaviors of events in the environment, there was a need to invent a belief system to make these environmental behaviors rational. Primitive humans invented belief systems wherein some thing or things had powers superior to humans, which were believed to direct and control the course of nature and human life. The form of the belief systems is a function of the group's environment and the group's knowledge of this environment.

It may be unknowable whether the two types of belief systems evolved at the same time, or if one or the other evolved first. However, it probably does not make a difference. Artifacts to support a belief in an afterlife are rather durable (bone and stone tools can, under favorable conditions last a long time). But artifact that infer a belief in rationality probably lack durability. Carvings and drawings representing something that may control phenomena important to humans well-being (and cannot be controlled by primitive humans) may imply human worship, and thereby infer a belief in something that provides rationality. However, it is known that later humans had gods that were believed to control nature (such as the sun and weather) and humans. It is possible that early humans invented religious systems for providing rationality.

It is hypothesized that there were many early religions. This hypothesis is based on the need to invent religions to address the ubiquitous mortality and rationality phenomena and on the isolation and lack of communication among the various groups. For example, the early human groups in Europe were completely isolated from those in Asia and Australia, but these widely separated groups invented their own religions to deal with the morality and rationality phenomena.

Inventions are typically based on real or perceived needs, and on the extant knowledge base and on the environment. Although the need for belief systems are universal phenomena, the knowledge base and environments of early humans were diverse.. For example, the environment for hunting groups in Australia is significantly different from food gathering groups in Asia. Therefore, the religious innovations of these groups would be expected to be very different. Because innovation is typically based on need, it is expected that religion invented by hunters would be based on their primary food source and the food gathering groups' religions based on their primary food source.

Religion Innovations

A primary need for religion innovations is to address the problem of mortality. This need

generated the belief in immortality. The belief in immortality in some form is almost universal, even in early animistic cults the germ of the idea is present, and in all the higher religions it is an important feature (Garvie, 1991). This important need resulted in the world wide invention of various religions. The wide variations in early religions is because of (1) geographic differences, (2) environmental differences, and (3) isolation of the groups that invented and assimilated these innovations.

Evidence of early inventions of religions goes all the way back to the Palaeolithic period. Disposal of the dead provides this evidence. The rituals and ceremonies associated with disposal of the dead were different for various groups of people, which implies the invention of diverse religious beliefs. For example "...the bodies of the La Ferrassie man and child were protected by stone, a pillow of flint-chippings were gathered together for the Le Moustier youth, and graves were dug for La Chapelle man and La Ferrassie infants" (Tildesley, 1951). Another example of diversity in the Palaeolithic period is burial positions of Europe and Africa humans. In Europe, the typical burial position is an attitude of sleep-knees bent, arms under the head while in Africa burials were in a contracted position. The diversity of burial ceremonies is also an indication of the inventions of different religions. In the early time of Neanderthal man the bodies of the dead were buried with some ceremony, and with the apparent exception of one or two very primitive tribes, there is no known people today which does not dispose of the dead in some well-defined traditional manner (Wedgwood, 1951). From a living systems science perspective, these early humans invented religions that determined burial behavior (ceremonies). The determinants of these behaviors (capacity to direct energy, available energy, information and knowledge) are all impacted by these social innovations.

Rational Innovations

Primitive humans had few facts about their environment upon which to invent belief systems to meet their need for a rational world. With few facts to construct belief systems that made their world rational, their innovations had few limits. Artifacts (such as items believed to have the power to provide rationality) and studies of current primitive societies demonstrate the wide range of belief systems. Some primitive humans invented belief systems bases on magic, some on religion, and others on a combination, which has been called magico-religious (Marett, 1951).

Primitive humans invented many forms of magic systems. Definitions of magic include (1) an extraordinary power or influence seemingly from a supernatural source, and (2) the use of means (as charms or spells) believed to have supernatural powers over natural forces. The inventions of magic belief systems include attributing supernatural powers to various items, such as animals and totems. For the primitives who believed in their magic system, the world around them became more rational. That is, behaviors they observed were caused by magic.

Some primitive humans invented religious systems to provide a more rational world. Typically, a god was invented who caused behaviors in nature that effected a group's well being or lack thereof. For example gods were invented to explain the behaviors of the sun, the sky and the sea.

Conclusion

Living systems science can be used to analyze and provide the rational for the emergence of the need for belief systems. The science can also be used to identify the social inventions of belief systems for meeting these fundamental needs.

References

- Comte, A. (1830 -1842). *Cours de Philosophie Positive*. 6 vols. Translated and condensed by Harriet Martineau and published as *The Positive Philosophy of August Comte*, 2 vols. 1933. J. Chapman. London..
- Garvie, A. (1951). "Immortality" in *Encyclopaedia Britannica*, 11ed.
- Marett, R. (1951). "Religion and Theology, articles on". In *Encyclopaedia Britannica*. 11ed
- Miller, J., (1978). *Living Systems*. McGraw-Hill. New York.
- Miller, J. (1999). "Foreword" In *Principles of Quantitative Living Systems Science*. Kluwer Academic/Plenjum Publishers. New York.
- Simms, J. (1971). *A Measure of Knowledge*. Philosophical Library. New York.
- Simms, J. (1983a). "Quantification of Behavior," *Behavioral Sci.* **28** 274-283
- Simms, J. (1983b) *The Limits of Behavior: A Quantitative Social Theory*. Intersystems Publications Inc. Seaside, CA.
- Simms, J. (1996). "Information; Its Nature, Measurement, and Measurement Units." *Behavioral Sci* **41** 89 - 103.
- Simms, J. (1999), *Principles of Quantitative Living Systems Science*. Kluwer/ Plenum Publishers. New York.
- Simms, J. (2006a), "Technical and Social Innovation Determinants of Behavior.". *Systems Research and Behavioral Science* **23** (in press).
- Simms, J..(2006b). *Principles of Living Systems Science for Groups and Society*. (in press)
- Tildesley, M. (1951). "Dead, The Disposal of." In *Encyclopaedia Britannica* 11ed.
- Wedgwood, C. (1951). "Dead, The Disposal of". In *Encyclopaedia Britannica* 11ed.