

# Anti-Knowledge™ and Ten Immutable Knowledge Creation Laws

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## ABSTRACT

This paper is based on a book pending publication: “Enterprise Knowledge Creation,” by Bruce LaDuke, Indianapolis, Indiana.

Just as the physical universe has immutable laws that we are developing and can apply to the physical elements, so the intellectual universe has a set of laws that apply to all of our intellectual creations. In this paper, we want to explore several of these laws that are directed toward Knowledge Creation (KC).

While nothing is sure in science, foundational laws support much of the conceptual infrastructure of the effort at large. In much the same way, a set of intellectual laws is needed to support the study and subsequent progression of our intellectual universe, particularly as it relates to knowledge creation.

In the process of exploring these laws we will touch upon key concepts that provide a conceptual foundation to support efforts in mechanized knowledge advance and artificial intelligence.

**Keywords:** Knowledge, knowledge creation, creativity, cognition, artificial intelligence, world view, technology, science.

## LAW # 1

**Science and technology progress via the process of knowledge creation.**

*...we must explain why science—our surest example of sound knowledge—progresses as it does, and we first must find out how, in fact it does progress. - - Thomas S. Kuhn, In Imre Lakatos and Alan Musgrave, Criticism and the Growth of Knowledge, Falsification and the Methodology of Scientific Research Programmes (p. 20)*

*We live in a society exquisitely dependent on science and technology, in which hardly anyone knows anything about science and technology. - - Carl Sagan*

For centuries science and technology have randomly progressed, at times quickly (e.g., the Industrial Age) and

at time slowly (e.g., Middle Ages), at times these two advance in harmony and at times with disparate progression. But in all of human history humanity has never really had a firm grasp on the process that fuels this progression. We did progress, but no one really ever clearly enunciated where we started, where we are going and what is the driving force of this progression.

It is the process of knowledge creation that drives the intellectual progression of the human race with respect to both science and technology. The process of knowledge creation is a single process and literally drives progression of everything we know (science, which from the Latin verb *scire*, “to know”) and produce (technology, from Greek *tekhnologi*, “systematic treatment of an art or craft”) into what we will know and will produce in the future.

Knowledge creation operates by one process with two modes of operation. In science knowledge creation is convergent in nature, while in technology (which also has its own supporting sciences) knowledge creation is divergent in nature. Science expands on its fronts of exploration, with the aim to reduce or converge expansive data to concise knowledge. Science wants to know about our world so that through it we collect data from reality and structure this data into scientific knowledge. Technology, on the other hand, branches out into more and more classes of products. For example, transportation is an arm of technology that continues to evolve into more and more classes with an occasional breakthrough into an entirely new class.

Both science and technology have existed for ages, but both were accelerated with the onset of the principle of the division of labor as introduced by the moral philosopher/economist, Adam Smith. This acceleration of “making things” then blossomed in the industrial age and further accelerated in the information age. We are now entering an emerging era in which we will exponentially multiply our capacity and capability for knowledge creation. In this emerging era we will either fall under the weight of concept confusion and information overload or we will fully harness knowledge creation, the great builder of human progress.

## LAW # 2

**Genius is high volume knowledge creation and is entirely dependent upon social acceptance.**

Knowledge creation equals genius. A person that amasses knowledge is an intellectual; regardless of how much knowledge he or she amasses. A genius goes beyond amassing knowledge and steps into the realm of accelerated or high volume knowledge creation.

Newton's laws were not in the textbooks or libraries of his day. He did not learn these concepts from a university professor and he did not read them in a book. He created them. It was this created knowledge that set Newton apart as a prominent figure in history and not the knowledge he had learned. Granted he needed to learn and grasp the knowledge context of his science in order to advance/create knowledge, but Newton did not get into history books over something everyone else already knew. It was his knowledge creation capability, as was the case with the many geniuses throughout human history that set him apart as a preeminent 'genius.'

When knowledge is created it transitions from the realm of the unknown to the realm of the known. Knowledge creation is the bridge between the known and the not yet known and is perpetuated either by accident (stumbling upon a solution) or by genius (purposed knowledge creation).

Our instructional systems tend to reward the amassing of knowledge and at times fail or neglect to reward knowledge creation. Expectations are based on intellectual competency with existing knowledge at rudimentary and advanced levels of educational institutions. We teach so that students may learn and reward knowledge amassed through learning. Knowledge creation tends to become an anomaly.

The knowledge creator must persevere beyond the often times grueling social obstacles until he or she gains solid social acceptance and can then be proclaimed a genius by society. He or she must jealously guard against theft of his or her created intellectual property, and can easily encounter legal hurdles and complexities.

In addition, one can be a genius and not be an intellectual. For this reason, the genius could be viewed as not qualified or incompetent. A knowledge creator does need knowledge context, but does not necessarily need to be an intellectual. However, without the credibility of established institutions, he or she will struggle in an uphill battle to achieve social acceptance.

On the other end of this spectrum, it should really strike one as odd to see supposed individual 'experts' in knowledge creation that really never produce new

knowledge. An expert in knowledge creation should create and possess new knowledge in abundance as validation of his or her expertise. A true genius breaks new ground and can produce new concepts to prove it.

Ah, but created knowledge is strange at first. Created knowledge requires effort to comprehend and is difficult to incorporate into the existing mental framework of both individuals and society. After all, if people are already familiar with it, then it is not new knowledge. New knowledge is easy to dismiss as strange or obtuse and is also easy to ignore as being insignificant.

New knowledge can take minutes, months or even years to accept, depending upon the complexity of the concept and the climate/culture of social acceptance. Knowledge creation is absolutely dependent upon the culture that embraces or fails to embrace created knowledge. We will always have knowledge creators, be it man or machine, and human society will always need to somehow facilitate the task of acceptance or rejection of new concepts.

## LAW # 3

**Specific knowledge interactions produce related specific results; the knowledge creation interaction alone results in created knowledge.**

If we deal strictly with the subject of knowledge working, and exclude AI topics of consciousness, awareness, etc., there are various knowledge interactions that work together in a complimentary knowledge-building paradigm:

1. Memory
2. Knowledge Acquisition/Common Sense
3. Learning, Exposure and Teaching
4. Knowledge Compiling (incorporation into social knowledge structures)
5. Knowledge Creation
6. Questions, Anti-Knowledge™ and Theory
7. Language Design
8. Collaboration, Sharing and Connectivity
9. Expression and Non-expression

Each of these interactions can be performed at any human level. For example, it is possible to have an individual memory, a work group memory, a discipline or enterprise memory, a social memory and a world (human race) memory.

For the purposes of this paper, we will only be able to address a few of these interactions very lightly, and at first glance you might even disagree with these classifications. For now, let's focus on the immutable law that all knowledge interactions (whatever these would be) involve specific processes that produce specific and related results.

In many circles, be it cognitive or systemic, individuals and organizations tend to confuse these knowledge interactions or assume that certain results will be achieved by one interaction, when in fact another totally separate interaction is required to achieve the desired result. All of these interactions are pertinent and useful to the knowledge worker, but all definitely do not achieve the same desired results. Individuals and organizations often assume that interactions other than the knowledge creation interaction will result in created knowledge.

One might assume, for example, that learning and teaching would result in created knowledge, when the true outcome of this knowledge interaction is amassed existing knowledge by the individual, discipline or enterprise. Learning absolutely never results in created knowledge.

Another might expect collaboration and connectivity to result in created knowledge, but these knowledge interactions leverage the collection of individual intellects and capabilities; collective intellects that may or may not contain newly created knowledge or an understanding of how to create new knowledge.

Yet another might assume that expression of knowledge will automatically result in created knowledge. But we can no more assume that what is “in people’s heads” (tacit knowledge) is newly created knowledge than we can assume that all Europeans are molecular biologists. It takes a very specific and repeatable process to create knowledge and not all individuals possess or utilize this roadmap of genius.

Gaining understanding around these knowledge interactions can quickly become a very complex undertaking. For example, as an individual I may have tacit knowledge on a topic that has already been disclosed to society, but in my own mind (having limited exposure), I believe the concept is newly created knowledge. In this scenario, I have tacit knowledge that is actually already created knowledge. I may have used the same knowledge creation process as the competitor, but in the end I would have failed to disclose the concept to society in time to make a knowledge creation contribution. In this example tacit knowledge is not equal to created knowledge.

The fact is that the vast majority of tacit knowledge is not created knowledge. It is a fallacy to expect sheer extraction of tacit knowledge from the minds of individuals to always result in knowledge creation and to do so is to leave the knowledge creation outcome up to chance.

In many enterprises, statisticians report back how many times we will “probably” (probability) achieve a desired R&D outcome. As a result of this paradigm, R&D expenditures are exploding worldwide as enterprises

throw money at the problem of knowledge creation. These invest billions into various knowledge interactions and basically leave knowledge creation interaction to chance.

It is not as if other interactions are not important or are not also critical. All interactions do need to be developed to work in harmony with knowledge creation, but an individual or an enterprise absolutely cannot ignore the stand-alone knowledge creation interaction.

Instead of offering probable knowledge creation, we can indeed harness this process and methodically create knowledge in a controlled process such that it forms the desired outcome every time. Knowledge creation can be a controlled, directed and accurate activity and does not have to be left up to chance. Knowledge working expenditures should be pointed at specific interactions in order to achieve specific outcomes lest we invest time, money and/or effort into a high-risk disappointment.

The knowledge creation interaction is the only bridge between the known and unknown. We cannot transition knowledge from the unknown to the known without it. Learning, expression, collaboration and connectivity can be complimentary to knowledge creation, but the knowledge creation process is absolutely required to create new knowledge.

#### **LAW # 4**

##### **Human creativity is not divine or accidental.**

Creativity is a one small word that possesses the power to revolutionize our world. Understanding creativity is the key to true machine intelligence. Research in the term has increased exponentially during this century. It is as if the world of the information age gained understanding on many, many complex topics and realized in this gathering that this little word was related to everything. It popped up in art, music, physics, product development, education and training, enterprise evolution and every other human effort. The more we learn, the more we turn to try to understand this little word that relates to everything. The only term we can find that has comparable relatedness is the term knowledge itself. There is logic behind this, as human creativity is an intricate part of the knowledge working/knowledge creation process.

Many fallacies have clouded our understanding around this term. Principle among these is the fact that for ages creativity has been perceived as a special gift or something that occurs by accident. Some saw it as incomprehensible (and in past years it probably was) and none saw it as a potential function of computerization.

In addition, research has mainly focused on the creative person, process and product. The implication has been

that creativity is an individual virtue only and that it is not or cannot be a function of groups or society as a whole.

No human ever created something out of nothing. We humans 'create' by combining existing physical and mental elements in a novel manner or to achieve a novel outcome. Since we can't readily see mental elements, it is easy to dismiss these as nothing, but mental elements exist as semiotic or semantic representations and the manipulation of these into an outcome is a key facet of creativity.

In a sense, scholarship around the term has been a lot like the blind men feeling the elephant at different places with each having a different perspective of this gentle giant. Many a discipline has glimpsed a portion of the term with its own concepts, terms and methods.

There are scores, perhaps hundreds, of creativity and innovation methods in existence, but these all work by tapping into one of the following active agents:

1. Association, Structuring and Stratification
2. Problem Definition
3. Question-Related
4. Directional or Morphological
5. Subconscious
6. Visual Methods and Visual Data Representation

Every creative method in existence enhances creative functioning via one of these active agents. Some methods are more holistic and attempt to include more than one of these active agents. Others attempt to include social impacts, social interactions or culture. But in consideration of the functioning of human creativity itself, all existing methods fall neatly into one of these six categories.

There is not room in this paper to deal with the implications of this observation, but suffice it to say that human creativity is a real and single process that manipulates existing mental elements and can be represented semantically and enunciated.

In reality, the many creative methods are actually portions of one method and the many terms and perspectives across disciplines and enterprises can also be brought into one concept with a single descriptor that operates within a concise functional framework.

#### **LAW # 5**

##### **All knowledge has structure.**

While there has historically been much controversy around the form of the structure of human knowledge, it is absolutely certain that knowledge is structured. To

prove this law to yourself, try to think of something you know that you cannot categorize, classify or taxonomize.

Everything we know falls into groups and associations. This is because everything we know is structured. In fact knowledge IS the structuring of data or incoherent mental elements. Our human brain works through making synaptic connections and this physical process reflects the operations of knowledge within the brain.

I personally believe that knowledge has a geodesic structure, but regardless of your persuasion on the shape of knowledge, one absolutely must concede that knowledge is structured and this structure has some shape (all structure has shape) and that this shape is currently developing at random, but theoretically could become exact and controlled progression.

#### **LAW # 6**

##### **Knowledge cannot advance/progress apart from a vehicle for expression and interpretation.**

From Plato's ideas and forms to the concept of priori of thought, men have struggled with the substance of thought. Regardless of the nature of thought and the nature of the existence of knowledge, knowledge absolutely cannot progress apart from some type of representation. Knowledge progression absolutely requires a vehicle for import/export, expression and interpretation.

This vehicle might even bypass our current means of physical representations of knowledge (e.g., natural language) via some new sensory technology, but regardless of the nature of this vehicle, some type of transport vehicle is required if knowledge is going to advance. Advancement of knowledge requires expression, through some intelligible form and the interpretation of that form.

#### **LAW # 7**

##### **There exist two distinct types of questions.**

If one can sift through all of the confusion and duplicate concepts, knowledge creation is really a very simple process. It involves the interaction between that which is known and the not yet known. This interaction must first pass through questions.

The Yin Yang symbol is a simple Chinese representation of the various solstices, the cycles of the sun and moon, the four seasons and the entire Chinese calendar. The Yin stands for moon and the Yang stands for sun. Such is the perpetual struggle of knowledge, a struggle between knowledge (light or Yang) and the unknown (dark or Yin). Knowledge working facilitates this struggle

between darkness and light. If one was to shine a flashlight into a dark field, the reach of light fades into the darkness as it is deflected by particles. Such is the relationship between questions and the unknown. Questions reach out into the unknown to a limited degree and show us what we don't yet know, but currently have difficulty seeing great distance out into the blackness of the unknown.

**The Learner Question:** Consider the sum of human intellect or the sum total of what we know as a human race. For a moment, visualize this sum of human intellect as a sphere. The sphere represents what we collectively know.

The first type of question that interacts with this hypothetical sphere of knowledge is the 'Learner Question.' The learner (which could be an individual or a collective organization) encounters portions of this sphere that are not yet known to him or her personally, but are already a part of this sum of human intellect. Someone, somewhere already knows this, and the learner incorporates what another already knows, typically in a systematic or structured learning environment. There is no knowledge creation involved with this interaction, just simply learning or amassing knowledge that already exists.

**The Knowledge Creation Question:** The second type of question is the 'Knowledge Creation Question.' These questions reach out into the unknown, into the realm beyond the sphere. These questions serve as a bridge to knowledge outside the sphere (new knowledge, created knowledge, knowledge that is unknown to the whole of society).

This can be an elusive and complex concept to grasp since for many the concept of 'known' is relative to one's own individual and organizational perspective.

This is yet another elusive concept. For example, if you consider a small group of individuals, something known by one individual in the group may or may not be known to another individual in the group. Yet this small group does have a collective intellect, or a collective known, as well as a collective unknown. Unless this collective known is made apparent to all in the group, the group would surely struggle if asked to determine what mode of questioning they were operating in.

We are engaged in a complex interaction of learners and knowledge creators that knowledge-work around the sphere or scope of knowledge. While it is often difficult to ascertain, all of this knowledge work occurs around two very distinct types of questions.

## LAW # 8

**Every knowledge structure has an equal and opposite anti-knowledge™ structure.**

First, let's ask the all-important question: "What is a question?" If you look in any modern dictionary you will likely find various synonyms for the term. Synonyms like investigation, examination, inquiry or interrogation are typically used, but the reader is inevitably left still with the question: "What is a question?" The definition of a question is not simply "To ask a question," but what is it?

Opposing forces are fundamental to our physical universe. Newton's third law states, "Every action has an equal and opposite reaction." From the baseball bat that strikes a ball to the collapse of matter into a black hole, positive and negative forces are intricately woven into the fabric of reality. The laws that govern human knowledge and our mental universe parallel those found in the physical universe.

The human race has historically spent considerable time and effort studying and operating in the known, while the unknown rests as a probability or even worse, an accident. The seemingly obvious conclusion is: "If it is unknown, then it cannot be managed." It sounds quite logical, but it is absolutely not true. We can manage the unknown. In fact, successful navigation and management of the unknown will be at the heart of the next quantum leap for our world.

Anti-Knowledge™ is a mental product that extends the structure of the known mental universe into the unknown via the structure of collective knowledge creation questions. This concept can also be applied to learning questions as a training methodology. Everything we don't yet know will one day assume knowledge structure. The anti-structure of our current knowledge structure is reflected to some degree (the light only illuminates a certain distance) in the collective of questions we develop around a particular topic. Cumulative questions form structure in much the same way that knowledge does. The more questions you ask, the more completely you build this structure. The basic concept is that by exhaustively asking and structuring questions, one eventually transitions the question structure into knowledge structure. Again, this product can apply to both the learner and to the knowledge creator.

## LAW # 9

**Any process that can be represented can also be mechanized, including knowledge creation.**

In systemic terms, the question is the query. Systems query existing content, even worldwide content, to find knowledge. But the current queries seek that which is known. They are the systemic equivalent of learning

questions. The key to mechanized knowledge advance is to teach the machine to ask knowledge creation questions, to teach the machine to query the unknown and translate what it asks into knowledge.

Any process that can be represented can be mechanized so the key to the knowledge creation machine engine is to represent this knowledge creation question process concisely and systematically.

This process is really quite simple, but the impacts on scholarship and current paradigms are phenomenal. Social incorporation (which is required) affects literally every fabric of our existence and will be quite difficult, though far from impossible.

To harness this singular, repeatable (and simple) process of knowledge creation is to harness mechanized knowledge advance. Mechanized knowledge advance is distinct from AI in that there is no desire or demand to harness consciousness, self-awareness or human sensory processing. The focus of mechanized knowledge advance would be on the automation of the knowledge creation process itself without respect to the mimicking of human functioning.

## LAW # 10

**Concept confusion, fallacy and information overload can all be outcomes of misappropriated knowledge interactions.**

Many people's interpretation of the concept of information overload is "too much information." This is only a partially correct interpretation. Information overload is the cumulative result of a misunderstanding and misappropriation of all of the stated knowledge interactions...an affect that is magnified by the quantity of data and knowledge.

When an individual, discipline or enterprise does not have harmonized knowledge roles coupled with a harmonized understanding of the nature of knowledge and knowledge interactions, chaos and confusion will be the outcome.

The fact is that the knowledge creation process is really very, very simple and though few (if any) have effectively enunciated it, many have been able to participate in this process, largely by accident or partial facilitation. Humanity would in no way have progressed to this point in science and technology without the knowledge creation process. We obviously have created knowledge and will surely continue to create it, but we must now harness this process or face the wrath of concept confusion, propagation of fallacy and information overload.

Generating new knowledge must work in cooperation with the other knowledge interactions. If, for example, we create and create and create knowledge, but fail to compile or learn knowledge, the unified system breaks down and succumbs to chaos.

Knowledge creation can be incredibly specific. When the process is properly understood, individuals or groups can actually create knowledge relating to a very specific knowledge domain with a pre-determined outcome. On the other hand, broad-based, uncontrolled knowledge creation can result in chaos and confusion.

This concept of global harmony of effort has also been expressed in the concept of the world view. It is rapidly becoming more and more clear that humanity cannot continue to proceed in our knowledge adventure without the "instructions to this game" of the advance of science and technology. We must have a framework for knowledge interactions and knowledge creation processes to effectively proceed. Players must be talking the same language and be on the same page as we contribute to the efforts of scientific and technological advance.