

## **SISMA™ Platform for Augmented Cognition** *Professional Evaluation - 14 October 2013*

Recently I was given the opportunity to interact with and evaluate the SISMA™ Platform for Augmented Cognition, as discussed in the attached document, *SISMA™ Platform for Augmented Cognition, Introduction & Discussion*, offered by Michael S. Pincus through his company Mnemotrix Systems, Inc. I found this platform to be entirely unique, unlike any offerings I have seen towards boosting human creativity and analysis capability for adults, young adults and students, providing a positive toolset which I believe to be much needed.

I believe this platform can be used to exercise, mediate, mitigate, and self discover the nature, functioning, and skills of one's own ability to think and study via accentuated metaphors. The whole idea is to use the system to gain access to one's own reverse inferencing ability, to one's own concept maps, and to reflect upon SISMA's machine intelligence system, to optimize the creative experience, learn as you go, and have fun.

The goal with this program is in the arena of mind/brain enhancement through the shared experience of a well thought out man-machine interlock; it is NOT entrainment which is what happens when your learning retrieval concept maps are based on linear approaches like Google and Bing and the plethora of database methods which expedite easy and fast retrieval of important factoids, but do not particularly encourage or enhance in-depth thinking through parallel motif, theme, and metaphor. In other words, there are plenty of tools available for rote step-by-step educational programs, but it is unusual to find tools which help "connect the dots" or "read between the lines" of parallel potentially related information.

In my experience working with gifted and talented young adults and children, I have found that a necessary ingredient to capturing their attention, interest, and therefore motivation to learn, is by allowing for selection of topic so that personal choice is activated, and applied towards a set lesson plan. The SISMA™ Platform presents a variety of topics easily traversed towards personal relevance. Once a topic is found, its similarities and differences are easily explored in relation to other motifs. This provides a counselor or teacher with a wide range of raw material easily customizable to each student's unique needs, and therefore moves the student along on the road to crystallizing his or her intelligence.

I validate this technology for use in creativity boosters, school education and enhancement, mediation for lags in creativity, and especially for engaging the unengaged student. Further I believe this same approach when applied to both young adults and to adults seeking to augment their cognitive capability has remarkable potential.

I have seen this same approach applied to the handling of trauma as well. In the case of a traumatized person suffering from PTSD syndrome of any kind, that person can be difficult to reach due to their having shut out everyone who has not experienced their

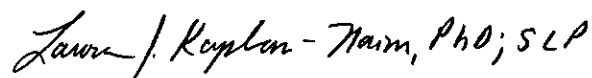
unique kind of trauma or pain. By creating customized databases of narratives and stories of people who do have similar circumstance, and allowing entry and access via the SISMA™ methodology, the person can realize she or he is not alone, and begin to relate to the world outside herself or himself. Thus opening the door to input, one can offer help, on a self-help or a mediated basis.

In our current educational platforms, we must also be aware and rise to the challenge of the new world as it is today, which is different than what it has been in decades gone by. We must be able and ready to prepare our young adults and students for finding a place in the workaday world, where the needed skills are changing. Another important element to the U.S. economy's current story is a series of what is termed "mega-innovations." Our future will hinge on the adoption of cutting-edge technologies in the field of robotics, personalized medicine based on genetic testing, cybersecurity, big data, cloud computing, digitization, custom manufacturing and quick time-to-market design, among others. These 8 primary elements are bringing new life to the U.S. economy. A different kind of person must be ready to engage in this world of "mega-innovations", and it is our responsibility to prepare them for this as much as we can.

The SISMA™ Augmented Cognition platform, which is based on concepts in Artificial Intelligence programming paradigms, can be scaled to age range, situation, and capability, which is important so that a "one-size-fits-all" approach can be surmounted. It is vital in approaching augmented cognition that the applications be scalable, and customizable, without requiring knowing ahead what kind of person will be met with, or what problems encountered. The databases in the base platform comprise a closed literature library consisting of famous works of literature, and a compendium of philosophic works from Buddha to Locke to Plato, along with a collection of retro science fiction short stories and a world of myths and legends. Because of the plasticity and speed of the platform, one can easily and quickly maneuver to motifs of interest, which sparks motivation and the creative process. Since it is all available "in the cloud" access is immediate for all schools and environments tapped into a wired network, as most institutions are today.

I believe the SISMA™ Platform used as-is, in its simplified Boost form for junior high and high schoolers, or its G/T (Gifted/Talented) form for increased interaction and challenge, or designed with custom databases for a select public, is a base for any interactive program, whether solo or mediated. I look forward to the opportunity to participate in programs which include the SISMA™ Platform towards specified results.

Yours sincerely,



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*Great Leaps in Education: Educational Assessment of  
Academic Needs of Children*

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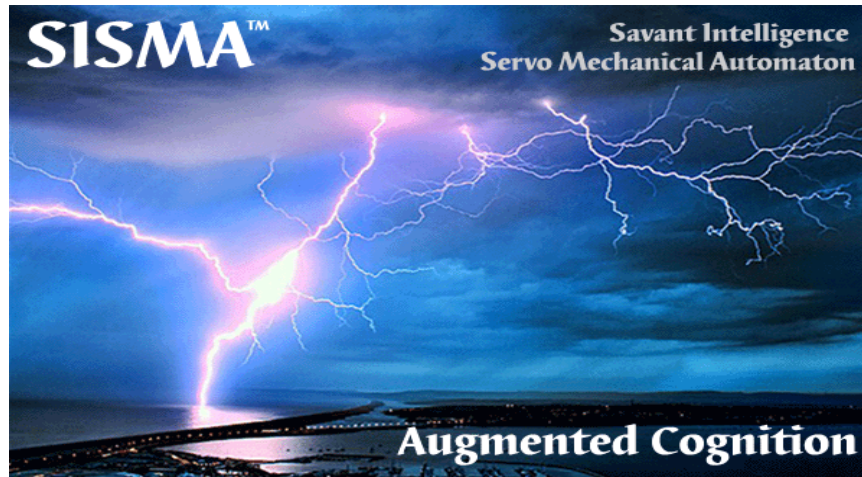
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## **SISMA™ Platform for Augmented Cognition** *Introduction & Discussion*



Computerized technologies are increasingly important in enhancing the ability of individuals to remember, think, reason, acquire and use knowledge. Mnemotrix Systems, Inc. provides a unique data-mining platform called “**SISMA™**”, Servo-Mechanical Savant Intelligence Automaton/Agent, used to augment human cognition. The methodology to bring this about is an orchestration of components developed by us over the last 3 decades in numerous applications in medicine, science, business, education, defense, and aerospace.

**SISMA™** provides a way for a researcher to bridge between different domains of knowledge and human experience by supporting metaphorical and analogical queries. Rather than through simple keyword searches, **SISMA™** enables metaphorical queries of all kinds of qualitative and narrative literature and big data, by incorporating sub-symbolic meanings of words and an inferencing engine core to help a user connect-the-dots in data in a completely unique way.

**SISMA™** is more than a search engine. It is a **thought engine**.

Meanings are translated as the result of interactions among various clusters of data and hubs in the networks of works contained in a specific database. **SISMA™** presents the student researcher or scholar with a very powerful tool with which to augment human cognition, addressing a critical shortcoming in other approaches, i.e., the problem of generalizing particular data to new situations and needs.

In the last decades we have taught the world to find things quickly and easily on the Internet. But conventional "search" engines such as Google, Yahoo, or conventional SQL database technologies like

Oracle fall short when it comes to supporting metaphoric thinking. We have taught our next generation using only conventional search technology to think in literal strings. Deeper relationships in data are becoming lost, as we learn how to skim things off the top faster and faster. Sometimes in the world of science or shopping this is a gift. But what happens when you need to read between the lines?

Globally, professionals, managers, teachers and parents are noticing in themselves and in their peers and family members an increasingly disturbing pattern associated with the inability to clearly grasp inferences in data enforced by conventional search technologies that rely on linear selections based on key words and relevance ranking methods. This includes the loss of interpersonal communications skills, inability to focus and concentrate, decrease in the unique human cognitive skill to think in terms of varied metaphors and changing motifs, failure to grasp changing themes if they are not directly related to earlier strings of data being found, negative or anti-social behavioral changes that come out of flaws in multitasking, and the lack of courtesy to give people undivided attention. The result is decreased knowledge, even while increasing one's database of world data, but with the added inability to extrapolate what people are learning into other fields of thought. These are a few of the trends which worry neuroscientific researchers.

This leads to an inability to connect-the-dots, and an overdependence on prepared solutions in a hierarchical set of multiple choices, but doesn't help us think better or more incisively. We need evolved humans to get us out of sticky situations, and we need to train them to think better, with better tools, so they can use their minds more fully, not less fully, and offer us choices that have not yet been conceived of.

**SISMA™** helps to mediate and repair human cognition and complex thinking skills and functioning by teaching a user how to inference and reverse inference, and how to think metaphorically while researching data and text of choice. By *augment*, we mean to enhance through mediated learning and computer based computational mechanical reflective processes. Our platform provides a way to augment a human's ability to learn and think in an enhanced and/or repaired manner.

Some would say that the tool begets the outcome. Thus as a lone voice in the world of search technology, we long ago took the road less traveled. And as Robert Frost said in his now famous poem, "... and that has made all the difference."

Through its AI based sense-making ability **SISMA™** provides a mediation device for students to identify, differentiate and locate and connect meaning and inference within information in databases too large for a single individual to ordinarily comprehend. An expandable apparatus allows for expansion to any chosen set of textual materials, in any variety of format. One can analyze reverse inferences, and known vocabulary grows with use.

Our platform is based on many years of programming and functions inside the world of Artificial Intelligence (AI) design, which began over 25 years ago when working in association with elements of the Japanese 5th Generation Movement, and later in collaboration with Dr. Jonas Salk and others seeking advanced computing methods for enhancing human performance.

By repairing the capability of inferencing, and enhancing metaphoric analysis of data, the process of suspending bias in one's analysis of data is augmented and upgraded. This is the overriding experience of analysts and researchers who have used **SISMA™** in various applications.

Neuroscience has discovered that our brains are plastic. What really makes SISMA™ "human like" is the ability of the platform to help a user find information according to an idea, or an expressed thought or question and not by key word or relevance ranking or other methods of simulating a "smart" search. The platform acts as a savant helper. Humans, at least those of us without a photographic memory, seem to remember events, readings, movies, and life moments by the idea and impression on the mind - not the exact recollection of the verbal exchange thereof. We are bombarded with new search engines all the time, all based on the same mathematical formulas and sometimes new whiz-bang type graphics added, but which don't add any functionality.

The following is a quote by a US Pentagon Navy analyst who has worked with the platform:

*"An example of this exchange is 'I remember this article I read that reported import cost estimates were off base'. Put in that kind of query 'incorrect import cost estimates' or something, and your news article doesn't come up. You don't remember when it came out (this hampers narrowing your research to a time frame) or who produced it. A great amount of energy and time will be expended trying to find this single article.*  
[\(<http://www.bbc.co.uk/news/science-environment-23931590>\)](http://www.bbc.co.uk/news/science-environment-23931590)

*What the SISMA platform does is assist the researcher by allowing him to search for the idea he has, the gist of an article he read, and so on. What is even more interesting is that in addition to finding exactly what you are looking for, it expands your mindset to possibilities you had not considered and finds tertiary sources or outside the box potential reactions. [It improves] man's ability to think metaphorically and improves inferencing ability."*

In one particular application the same core is used as a therapeutic tool for healing psychological injury through metaphor and improving language comprehension in traumatic brain injury. It can restore equanimity in a troubled world, by bringing seekers into contact with restorative themes and motifs.

Please contact me to schedule an online demonstration, and let me show you our savant automaton at work. Contact me at [mnp@mnetrix.com](mailto:mnp@mnetrix.com).

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