Abba-Dabba-Ooga-Booga-Hoojee-Goojee-Yabba-Dabba-Doo: Stupidity, Ignorance & Nonsense as Tools for Nurturing Creative Thinking

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The aim of this paper is to shed light on the positive aspects of stupidity, ignorance and nonsense and also provide practical advice on how they can be used for sparking and nurturing creative thinking.

Abstract

Despite the present abundance of approaches and information related to creative thinking, three basic human traits have been completely overlooked although that, if cautiously used, can considerably contribute to the creative process. Not coincidentally, these traits are also the ones that education has traditionally demonized and designated as its major enemies: stupidity, ignorance and nonsense. The aim of this paper is to shed light on the positive aspects of these defamed traits but also provide practical advice on how they can be used for sparking and nurturing creative thinking and innovative design.

Author Keywords

Creativity; Design; Thinking out of the box

ACM Classification Keywords

H.5.m. Information interfaces & presentation (HCI)

Introduction

When children of today finish school they will face a much different social and employment landscape with respect to previous generations. In order to be able to rise to the forthcoming challenges, young learners will need to acquire different skills than those that have traditionally been nurtured. Creative thinking is currently regarded as a key "employability" skill [9] and a core competency able to produce economic value. According to IBM's Global CEO Study [6], creativity is also the most important leadership quality. But, as any parent knows, young children do not need to be taught
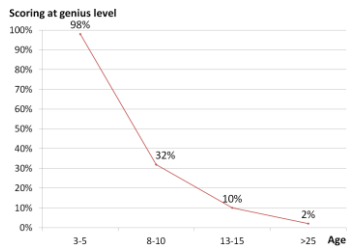
Diagram of the "fourth grade slump" [23] based on a 1968 study with 1,600 children by educators G. Land and B. Jarman [13]. A dramatic drop of creativity is shown after the ages of 8-9.

Making sense out of nonsense: Coffee reading as a way of fortunetelling (*tasseography*)

how to think "out-of-the-box". They already do it all of the time with tremendous success. Actually, they do not know how not to. Probably because the "box" does not exist. So, a key issue is when and how this "box" is constructed.

In 1968, E. P. Torrance, father of the homonymous tests of Creative Thinking (TTCT), coined the term "*fourth grade slump*" [23] to describe a massive decline in creative thinking by children around the ages of 8-9 (i.e., fourth grade). Torrance primarily attributed this fact to social factors and peer pressure, while subsequent researchers have also included conforming and adhering to social conventions and norms. More recently, Kim [10] by analyzing the results of TTCT for about 273,000 students and adults, discovered that since 1990, in contrast to IQ scores that have been rising, creative thinking is declining among Americans of all ages. The idea of a nationwide "creativity crisis" suggested by Kim's research has got a lot of media attention, especially after a related Newsweek article[1]. Sir Ken Robinson in his famous TED talk[2] principally attributes the above phenomena to schools, accusing them of "educating people out of their creative capacities." After all, in the past decades there has been an increased emphasis toward drill exercises and rote learning, as well as on standardized and homogenized approaches for evaluating student abilities and performance. In other words, school is where the foundations of the "box" can be traced. Another piece of evidence supporting this case, is that

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[1] http://www.thedailybeast.com/newsweek/2010/07/10/the-creativity-crisis.html

[2] http://www.ted.com/talks/ken_robinson_says_schools_kill_creativity.html

several educational systems worldwide (e.g., UK [18], Australia [16], China [1]) have reformed their curricula aiming to explicitly cater for creative thinking.

But creativity is not only required by future generations. Many professionals need it today, irrespectively of their field of work. Therefore, several (semi-)formal methods claiming to encourage creativity have been devised, related workshops, classes and conferences are frequently held, while a search in Amazon results in more than 30,000 relevant books. Still, in spite of this abundance of approaches and information related to creativity, three human traits that, if cautiously used, can considerably contribute to the creative process, have been completely overlooked. Not coincidentally, these traits are also the ones that formal education through the ages has traditionally demonized and designated as its major enemies: stupidity, ignorance and nonsense.

Stupidity, Ignorance and Nonsense vs. Creative Thinking

In 1754, W. Hogarth created an engraving for J. J. Kirby's book on linear perspective (Fig. 1) entitled "*Satire on False Perspective*" that included the subtitle: "*Whoever makes a DESIGN without the Knowledge of PERSPECTIVE will be liable to such Absurdities as are shewn in this Frontispiece*". But, it seems that he achieved exactly the opposite result of what he intended to. The resulting picture is highly imaginative and a lot more interesting than the thousands of other paintings made by people who possessed and applied "the Knowledge of PERSPECTIVE". In other words, Hogarth's creativity was unknowingly sparked by an intentional combination of what he deemed as utter stupidity, ignorance and nonsense.

Detail from "*Memnon pieta*", Ancient Greek Attic red-figure cup, ca. 490–480 BC. The leftmost inscription does not seem to make sense while the rest inscriptions do (source: Wikimedia Commons)

Gestalt law of Closure [11]: objects close to each other are seen as a whole; our mind completes the missing parts to increase the familiarity of stimuli, i.e., to make sense out of nonsense.

In May 3, 1997 during one of the chess games between IBM's Deep Blue versus the World Chess Champion Garry Kasparov, the computer made an unexpected move that surprised Kasparov and eventually led to his defeat. As it was recently revealed [21] this move, which Kasparov attributed to advanced intelligence (or human-assisted cheating), was nothing more than a bug. Unable to select a move (*ignorance*), the program did not use its artificial intelligence (*stupidity*) and picked a play at random (*nonsense*). Thus, this historical moment that was heralded as one of the first triumphs of machine over human intelligence, turned out to be nothing more than yet another victory of the combined forces of stupidity, ignorance and nonsense over intelligence, knowledge and sense.

Figure 1. "Satire on False Perspective" by William Hogarth (1697–1764) (source: Wikimedia Commons)

Nonsense

In Ancient Greek pottery inscriptions are sometimes seemingly meaningless combinations of letters. Up to now, the prevailing explanation was that these were made by illiterate vase-painters either to imitate the decorative effect of literate inscriptions or, to give the impression that they were literate. But, "nonsense inscriptions" often coexist with others that do make sense. Furthermore, there are too many of them (about 1/3 of vases in the Corpus of Attic Vase Inscriptions[3]). Recently, Mayor et al. [15] came to a groundbreaking conclusion. There is evidence that (at least some of them) constitute names and words of "barbarian" tongues transliterated into Greek. Sometimes experts label what they cannot understand as nonsense, while in reality the distance between nonsense and sense is just a matter of standpoint. After all, our everyday lives are full of nonsense and there is so much of it that we rarely even notice. For example, in June 2010, almost half of the earth's population spent at least one minute watching 22 grown-up guys kicking around an inflated piece of plastic (i.e., FIFA World Cup South Africa[4]). In 2006, "No. 5, 1948" a painting by Jackson Pollock showing colored paint drizzles was sold for $140m, the highest sum ever been paid for a painting[5]. And so on.

In general, humans are great in making sense out of nonsense. Ask someone about the meaning of a non-existent word and s/he will come up with an answer; or just watch an old lady confidently reading the residues of coffee at the bottom of a cup. The Gestalt

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[3] http://www.unc.edu/~hri/Inscriptions.pdf

[4] http://www.fifa.com/worldcup/archive/southafrica2010/organisation/media/newsid=1473143/index.html

[5] http://www.nytimes.com/2006/11/02/arts/design/02drip.html

The 4th blot of the Rorschach inkblot test
(source: Wikimedia Commons)

"Nonsense is so good only because common sense is so limited."

George Santayana
(1863-1952)

Psychology [11], epitomized by the phrase "the whole is different than the sum of its parts", devised a number of organizing principles of perception that the human mind follows in order to make sense and simplify the multitude of received stimuli. These "laws" include *proximity*, *similarity*, *closure*, *symmetry*, *continuity*, *past experience*, etc.

In literature and the arts nonsense has its own merit and is often acknowledged and praised. Edward Lear's "*A Book of Nonsense*" in 1846 became extremely popular and he eventually produced many other similar works. Lewis Carroll with his "*Alice's Adventures in Wonderland*" and "*Through the Looking-Glass*" books continued along this line creating a new form of children's literature. "*Finnegans Wake*" by James Joyce is considered to be one of the masterpieces of English literature, although due to its use of multiple (including invented) languages and its dreamlike plot and flow, most readers – experts or not – cannot even agree on what the book is about. At the beginning of the 20th century the *Dada* avant-garde cultural movement, which had a profound effect on art (although sometimes labeled as "anti-art"), rejected reason and logic and adopted nonsense and intuition as fundamental design principles. Along the same line, in the post-WWII 50's the highly innovative *Theatre of the Absurd* staged "illogical" plays aiming to dramatize the absurdity and pointlessness of human existence.

But nonsense is not only employed by the arts. Most scientific domains including mathematics, physics, biology, chemistry and economics, utilize various forms of "nonsense", including ambiguity and paradox, in order to form new questions, challenge established theories and find better ways to explain the chaotic nature of our universe. One of the most famous examples that even managed to infiltrate the realms of popular culture is a thought experiment of the Nobel prize-winning physicist Erwin Schrödinger involving a cat in a box with a vial of poison which might or not be broken based on an unpredictable radioactive substance event. Interestingly, scientists do not agree on its actual goal, as some support that it intends to illustrate the flaws of, while others, simply to explain, the "*Copenhagen interpretation*" of quantum mechanics. Science has also used nonsense as a diagnostic tool. The *Rorschach psychological test* created in 1921 is used to diagnose personality characteristics, emotional functioning and thought disorders by requesting a subject to interpret a standard series of 10 ambiguous symmetrical inkblots.

Actually, nonsense and science can sometimes be so much interweaved that there are cases where it becomes difficult to differentiate one from the other. In 1996, Alan Sokal, a physics professor, created a parody of an academic journal paper which was published in Social Text, a leading postmodernist journal [24]. Some years later, three MIT students created *SCIgen*[6], a computer program that randomly generates computer science research papers. A recent paper [12] revealed that at least 85 SCIgen papers have been published in 24 IEEE different conferences.

In fairytales magic words are often pure nonsense, e.g. "*Abracadabra*", "*Alakazam*", or the more imaginative "*Abba-Dabba-Ooga-Booga-Hoojee-Goojee-Yabba-Dabba-Doo*[7]". This is not by chance. Nonsense is far

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[6] http://pdos.csail.mit.edu/scigen/

[7] http://www.mysteryarts.com/magic/words/Ed.3/?p=51

Design suggestion #1:

Whenever possible try to encompass "nonsensical" (*ambiguous*) parameters as an integral part of your design. Sometimes nonsense may also be (part of) the solution (like e.g. in the case of the Joker card).

more powerful than sense, mainly because it can take any meaning, thus leaving a window open for imagination to sneak in. The same magic word can be used to pull a rabbit out of a magician's hat, or to turn a frog into a prince. Its powers are only limited by the creativity of its utterer. When a magic word is even partially meaningful its powers automatically diminish; e.g., "open sesame" can only be used to open a thieves' cave, or the entrance of a smart home.
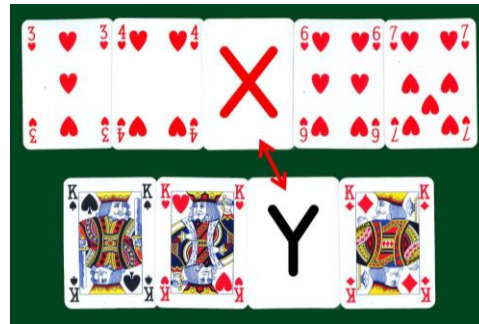

Figure 2. Nonsense can provide solutions to design problems that conventional thinking may deem unsolvable.

Nonsense has the power to provide solutions to problems that according to logic may be deemed unsolvable. A simple example can be drawn from the realm of card games. In Fig. 2, two poker hands are shown: at the top, a hand where if X = 5♥, results in a straight flush, and at the bottom, one where if Y = K♣, will rank as four of a kind. Common sense suggests that there cannot be a single card which can concurrently solve both "equations". However, in about 1860, a "nonsense" card was introduced that became known as the Joker or "wild card" which is allowed to be interpreted as any other existing card.

Real-life design problems are frequently chaotic in nature comprising several unknown, ambiguous or even "nonsensical" parameters. What often designers are taught, is that the first step to success is to thoroughly define and analyze a problem at hand and then try to devise THE solution. This means that during the process of making sense out of ambiguity and nonsense (a form of "translation") inevitably some information is irreversibly lost or misinterpreted. Furthermore, as human-centered design preaches, it is also very likely that there may not exist a single solution to a problem, but several ones, according to different "values" or interpretations that its diverse aspects may occasionally afford. A radically different approach is to acknowledge nonsense as an essential design feature - instead of a flaw in the problem specification - and seek to encompass it as part of the resulting "solution". In this case, the outcome will rather be a "constellation of solution constituents" able to reconfigure and transform itself in order to adapt to any alternative manifestations in which the problem at hand may materialize (i.e., "make sense"). Embracing nonsense during design equals to embracing and catering for human diversity.

Ignorance
As paradoxical as it may sound, we do not know much about ignorance. Stuart Firestein, Chair of Columbia University's Department of Biological Sciences created a course titled "*SNC3429 Ignorance*" and invites academics from various disciplines to talk about what they don't know. In this course, as well as in his related book [3] he focuses on a specific type of ignorance: "absolute or true ignorance, the ignorance represented by what really isn't known, by anybody, anywhere." It is the same type of ignorance that Socrates refers to in his defending speech in Plato's *Apology* (to which the
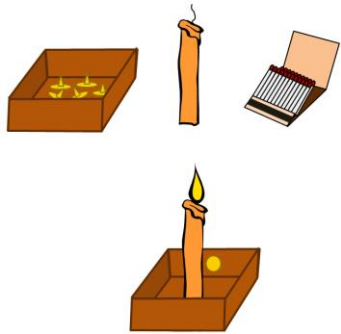
Duncker's candle box experiment [2].

Participants are given a box containing a candle, pins and matches, and are asked to attach the candle to the wall so that it does not drip on the floor. Most participants try to attach the candle to the wall with the pins or by melting it. Very few think of using the box as a candle-holder and pinning it to the wall.

famous saying "*I know one thing, that I know nothing*" is often misattributed). But this type of ignorance is only about things we know that we don't know. Nevertheless, there are more types of ignorance, e.g., the things we think we know but we are wrong (e.g., scientists still don't really know how bicycles work[8]); the things we don't know we know; the things we do not know that we do not know; etc. Contrary to common beliefs there are several cases where all types of ignorance can have positive results, ranging from discovering a correct answer to a quiz or even a new continent, to creating groundbreaking innovations.
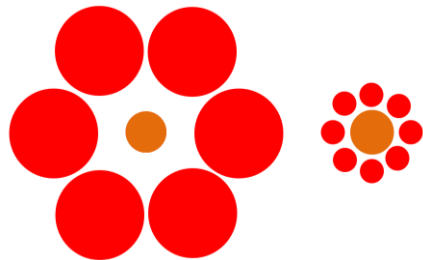

Figure 3. Sometimes ignorance is synonymous to bias-free.

When 7 postgraduate computer science students were independently shown by the author the image in Fig. 3 and asked to state which of the central circles is bigger, they unanimously answered that they are of the same size. When 7 children 3-6 years old were asked the same question, they all pointed to the right circle, which is the correct answer (it is 8% larger). When the students were questioned about the reasoning behind their answers, they admitted that they were already

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8 http://www.newstatesman.com/science/2013/08/we-still-don't-really-know-how-bicycles-work

familiar with similar optical illusions where the answer is that the shapes, irrespectively of what their brain dictates, are identical. Thus, children's ignorance, much like in the tale with the emperor's new clothes, allowed them to be free from any bias and state an obvious truth. This is an example of what is scientifically called the "*Einstellung effect*" [13], a term coined in 1942 by Luchins [13] as a result of experiments in which subjects were asked to solve problems involving measuring water quantities using a set of jars. The experiments revealed that after solving several problems that had the same solution, the subjects would mechanically adopt it even for problems that had a simpler or a different one. Also, Karl Duncker [2] with his "candle box experiment" introduced "*functional fixedness*" as a mental bias limiting a person to using a known object in novel ways. When German and Defeyter [4] repeated the experiment with young children found out that functional fixedness can be demonstrated in older children but younger children are immune to it. Additionally, an interesting finding in decision-making research is what is known as the "*less-is-more effect*" [5] according to which under certain conditions, individuals with less knowledge make more accurate inferences than those with more. For example, when American and German students were asked to choose whether San Diego or San Antonio has more inhabitants, only 60% of the Americans answered correctly versus a stunning 100% of the Germans.

In 1509, Desiderius Erasmus of Rotterdam wrote *In Praise of Folly*, one of the most important books of Renaissance Humanism. Folly, dressed as a jester, stands before an audience and praises her virtues. At some point, Folly states: "The burnt child dreads the fire. For there are two main obstacles to the knowledge

"No one rises so high as he who knows not whither he is going."

Oliver Cromwell (1599-1658), English military and political leader (and lifelong improviser)

Design suggestion #2:

Try to devise design solutions prior to seeking related expertise and knowledge (or ask someone else who has not). Then, strive to identify innovative aspects by comparing them with previous work and assess their potential value and impact.

of things, modesty (…), and fear (…). But from these folly sufficiently frees us, and few there are that rightly understand of what great advantage it is to blush at nothing and attempt everything." Charles Darwin in *The Descent of Man* (1871) seconds this opinion by stating that "ignorance more frequently begets confidence than does knowledge."

In many cases, it is ignorance – not wisdom– that becomes the stepping stone to discovery, since it has what it takes to make a move towards "somewhere" where no knowledgeable person would ever think or desire to go. Being unaware that you have reached what is considered to be the end of the earth, you can lightheartedly move further ahead. Christopher Columbus "until his last breath, he entertained the idea that he had merely opened a new way to the old resorts of opulent commerce, and had discovered some of the wild regions of the East." [7]. Not knowing that what you attempt to achieve has already been "proved" to be impossible (or the opposite), may lead you to revolutionary results. At age of 18, Alexander Graham Bell, was experimenting with the transmission of sound, when he was informed about an invention of Helmholtz which could create human vowel sounds. Bell was unable to read German, so, based on fragmentary information, came to the conclusion that the machine not only modulated but also transmitted vowel sounds. Thus, he decided to experiment with a seemingly manageable task: extending the invention to transmit other sounds too. This mistake eventually lead to the invention of the telephone and as Bell later admitted "If I had been able to read German in those days, I might never have commenced my experiments!" [22].

Ignorance can also be a tool for ensuring social and political justice and considering society from multiple perspectives. John Rawls in "*A Theory of Justice*" (1971) proposes a theoretical device called "the veil of ignorance" [20] as a means for eliminating personal bias and guarantee fairness. Rawls claims that if people are unaware of their position in the future society they will likely not favor a particular group over another.

In the light of the above, one can conclude that the high-level of creativity of young children discussed in the introduction may be principally due to the fact that they know so little about the workings and laws of the world, or in other words, to their ignorance. François Jullien, a contemporary French philosopher and sinologist, notes that [8] "There is not only what I am thinking. There is also the basis upon which I am thinking and as a result I am not thinking about." Thus, often the basis of our thinking (i.e., our knowledge) can also become the (subconscious) limit of our creativity.

In practice, there are cases where ignorance may lead off the beaten path, to innovation. Just because other people have done things a certain way that doesn't make necessarily it right. Thus, contrary to widely applied scientific practices, one may take advantage of his/her (acknowledged) ignorance – or the ignorance of a third person - and first try to devise a solution to a problem without looking into what other people have already done, and seek related knowledge later for identifying and harnessing any useful "ignorant" qualities (i.e., something that no one has ever thought or tried before). Furthermore, the concept and principles of the "veil of ignorance" can be adopted in design as a means of ensuring an equally appropriate result for all the potential members of a target group,

irrespectively of the designer's own characteristics, preferences or abilities. Of course, leaving off the beaten path may not always be good. It could as well prove to be dangerous or even catastrophic. This is why one should be very cautious and always keep in mind that ignorance in this case is just a means and not the ultimate goal.

Stupidity

The word "stupid" has its origin in a Roman clown named Stupidus [19], a secondary character who was satirically mimicking other actors. He was also one of the forefathers of fools, jesters, clowns, and slapstick comedians. Such "fools", from Aristophanes' *bomolochus* (foul-mouthed) stock character to the Shakespearean fool, no matter if their "foolishness" stemmed from a mental disability, or was simply a performance, were attributed with childlike innocence and ignorance of social rules and in many societies enjoyed the privilege of unlimited freedom of speech without any consequences. In the 18th century, professors of German Universities would augment their incomes by playing the fool at court [25]. In English, a synonymous to stupid is "dunce" which stems from the name of John Duns Scotus, a 13th century philosopher-theologian and professor at Oxford, Cambridge and Paris, whose reasoning was so detailed and complex that was attributed the title of *Doctor Subtilis* (Subtle Doctor). Scotus is considered such an important figure for the Catholic Church that in 1993 Pope John Paul II proclaimed his beatification (i.e., the third out of the four steps required for being declared a saint). But in the 16th century the teachings of Scotus were rejected by the humanists. His followers, who strongly objected the emerging scholar doctrines, were labeled as incapable of learning and because Scotus, adopting the

wizards' tradition, considered that pointed hats can direct knowledge to their wearers, his opponents reduced the infamous conical "dunce cap" to a symbol of idiocy (which later became a means of school punishment).

Historically, there have been numerous cases where stupid ideas were deemed as intelligent and vice versa, even by people considered intellectually gifted. For example, for most of human history until Galileo proved it wrong in the late 16th century, everybody believed that heavier objects fall faster. Aristotle, in The History of Animals (350 B.C.), assumes that "Males have more teeth than females in the case of men, sheep, goats, and swine". A.G. Bell, spent about 30 years of his life and tens thousands of dollars to (unsuccessfully) breed multi-nippled sheep, on (the completely scientifically unsupported) assumption that they would be more fertile - he even published a related paper in Science magazine. Lord Kelvin, the great mathematician and physicist, in 1895 predicted[9] that "Heavier-than-air flying machines are impossible" and Albert Einstein in 1932 proposed[9] that "There is not the slightest indication that nuclear energy will ever be obtainable."

Many dictionaries define stupidity as the lack of intelligence. In essence, the main relevance between the two is that they are both ill-defined concepts that do not hold a universal value or status. They are subjective in nature and constantly change though time and space, habitually formed by some type of "majority" - something is often considered to be stupid if it contradicts common practice, knowledge or, sense.

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[9] http://www.nytimes.com/1996/09/29/magazine/tomorrow-never-knows.html
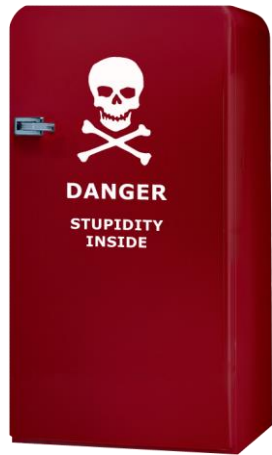
The Stupidity Refrigerator

Design suggestion #3:

Never totally dismiss an idea (your own or, others') on the assumption that it is stupid. Keep it (preferably in your *stupidity refrigerator*) for future reference, as it may become of value as your design progresses or, as technology, science and society change.

"*If stupidity were not confusingly similar to progress, ability, hope & improvement, then noone would want to be stupid*" notes the Austrian novelist Robert Musil in his lecture "*On Stupidity*" delivered in Vienna in March 1937 [17].

The overall problem is that there is no reliable way to differentiate between an idea that seems to be stupid because it is groundbreaking or far ahead of its time, and an idea that sounds stupid simply because it truly is. Thus, from a designer's point of view, it is better not to instantly disregard seemingly stupid ideas or the persons that suggested them. Instead they should be encouraged and kept in the design loop as future reference, so that they can be used, if and when their time arrives, or in case everything else fails. Furthermore, as the world changes, there is a possibility that a formerly stupid idea becomes – without any modification – a good one.

Even "genuinely" stupid ideas are not that bad. They are great fuel for lateral thinking, and, sometimes a bad idea is in fact a good one with a bad hair day. Also, there are people who have the exceptional ability to turn stupid ideas into great ones (and sadly a lot more who can effortlessly achieve the opposite). Similarly to dreams, all kind of ideas – good, bad or indifferent – are made from the same stuff - human intellect - a highly potent brain stimulant. So, just like rabbits, the more you breed, the more will (exponentially) emerge. And, although normally quantity does not equal quality, in the realms of ideas history has proved that the more the merrier.

A suggested related creativity tool is a "stupidity refrigerator" where all "stupid" ideas can be collected, kept fresh and without being able to "contaminate" each other. Every now and then, or upon need, one can open the refrigerator's door and have a quick check to see if the time has come to defreeze some of its contents, or simply to be inspired.

Conclusions

Stupidity, ignorance and nonsense are massive human powers. Unfortunately, throughout human history they have been primarily used with catastrophic effects: wars, mass destructions, environmental detriment. Still, mankind has achieved to master and harness other great powers such the wind, the sun, even the atom. So maybe, if these powers are properly studied and used with care and respect, one day we will be able on the one hand, to take advantage of them, while, on the other hand, to limit their damaging effects.

To this end, what this paper aims to communicate can be summarized in just four brief statements regarding Stupidity, Ignorance and Nonsense (*axioms of SIN*):

- There is no box - just thinking!

- If you already know where you are going, you are not going someplace new.

- Stulta ratio, sed ratio[10] (or, *"Don't worry, be stupid")*.

But most importantly,

- Abba-Dabba-Ooga-Booga-Hoojee-Goojee-Yabba-Dabba-Doo!

Afterword

At this point it should be strongly emphasized that this paper does not suggest replacing other established and valued resources of (creative) thinking and design with

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[10] (*It is a*) Stupid idea, but (*it is*) an idea.

stupidity, ignorance and nonsense. It merely indicates that these human traits - if properly and knowingly employed - can positively contribute to the originality of the end result. Just like a spice, they cannot substitute the actual meal and too much of them will eventually spoil it (or the eater's health).

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