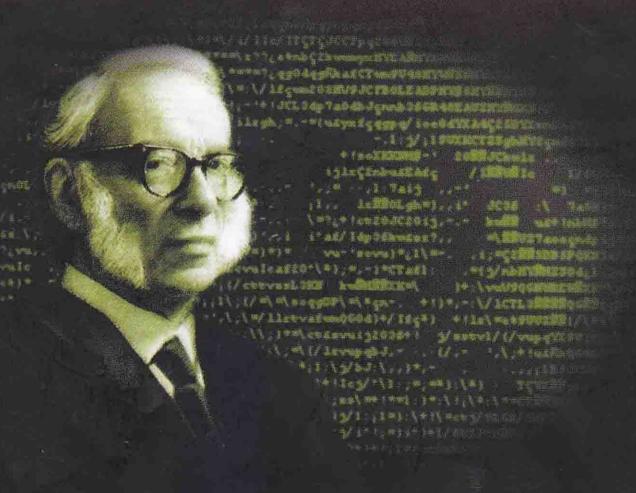
Hatashe's Hypothesis and the Principle Mathematics of Applied Psychohistory

## Hatashe



$$\mathbf{F}_{t} \alpha \mathbf{I}_{R} + \mathbf{S}_{R} & t \alpha \frac{\mathbf{T}}{\mathbf{F}_{t}}$$

Prime Radiant da Luxuries Physics
Hatashe's Hypothesis and the Principle Mathematics of
Applied Psychohistory

**HATASHE** 

## Prime Radiant da Luxuries Physics HATASHE

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Writter

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Dedicated to My friend:

Sharyl Lynn & Kenneth W. Braddock

"Hello Hatashe, Physics has shaped my thinking about Dignity, and so I am glad to learn of your work, and encourage you to publish it. My suggestion to you is to make it available on a website. Often a writer can reach more readers this way than with a traditional book. If you want to get feedback from the public, create a place on the website for readers' comments. You can also find a free copy of my book on mathematical physics (Mathematics of Classical and Quantum Physics) on the Internet by googling its title. I think that learning the math in that book might provide you with tools with which to pursue your admirable goals. I could send you the link when I return home at the end of January. My best wishes for you."

Robert W. Fuller www.breakingranks.net

Professor Dr. Robert W. Fuller earned his Ph.D. in physics at Princeton University in 1961, and taught at Columbia University where he co-authored the book "Mathematics of Classical and Quantum Physics". The mounting social unrest of the 1960s drew his attention to educational reform, and in 1970 he was appointed president of his alma mater Oberlin College at the age of 33, one of youngest college Presidents in US history. In 1970 Fuller traveled to India and served as a consultant to Indira Gandhi and, on a return visit the following year, witnessed firsthand the famine resulting from the war of succession of Bangladesh from Pakistan. With the election of Jimmy Carter, Fuller

began a campaign to persuade the new president to lead the nations of the world, once and for all, to end hunger. His meeting with Carter in the Oval Office in June 1977 led to the establishment of the Presidential Commission on World Hunger. During the 1980s, Fuller traveled frequently to the USSR, working as a Citizen-Scientist to improve the Cold War relationship. Fuller lives in Berkeley, California with his wife Claire Sheridan. Fuller also writes regular articles for The 'Psychology Today', 'Huffington Post' and 'OpenLeft'. Fuller wrote some books "All Rise: Somebodies, Nobodies", "Dignity for All: How to Create a World without Rankism", etc. and have been translated and published in India, China, Korea, and Bangladesh.

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## Chapter-1

### **Psychohistory**

Psychohistory, a science in Isaac Asimov's Foundation universe, combines history, sociology, mathematics and statistics to make (nearly) exact predictions of the collective actions of very large groups of people, such as the Galactic Empire. Include the controversial study of the psychological motivations of historical events. It combines the insights of psychotherapy with the research methodology of the social sciences to understand the emotional origin of the social and political behavior of groups and nations, past and present. Its subject matter is childhood and the family (especially child abuse), and psychological studies of anthropology and ethnology (must) with the three axioms of Isaac Asimov.

Psychohistory depends on the idea that, while one cannot foresee the actions of a particular individual, the laws of statistics and mathematics as applied to large groups of people could predict the general flow of future events. Asimov used the analogy of a gas: an observer has great difficulty in predicting the motion of a single molecule in a gas, but can predict the mass action of the gas to a high level of accuracy. Physicists know this as the Kinetic theory. Asimov applied this concept to the population of his fictional Galactic Empire, which numbered a quintillion. The character responsible for the science's creation, Hari Seldon (in other word, Isaac Asimov), established two axioms:

- That the population whose behavior was modeled should be sufficiently large.
- That the population should remain in ignorance of the results of the application of psychohistorical analyses.
- 3. That Human Beings are the only sentient intelligence in the Galaxy.

(There is a third underlying axiom of Psychohistory, which is trivial and thus not stated by Seldon in his Plan, but certainly (and overall) Isaac Asimov, established three axioms in his foundation)

### NEWTON'S THIRD LAW OF MOTION

The important laws and axioms of the world are very simple and direct on human beings for that reason generally people can not understand or realize it, because it is very simple. After an invention everybody says it's very simple! We knew it, but nobody ever realized it like the inventor. Such as I can say about Newton's third law of motion; "To every action there is an equal and opposite reaction."

And can be summarized as follows:

"Whenever a first body exerts a force F on a second body, the second body exerts a force -F on the first body. F and -F are equal in magnitude and opposite in direction."

But before the invention of third law, were human being not already facilitated by the law of motion? Off course, but after invention, human only understand about their working policy by the third law and it's developing our civilization. Newton was first to realize the simple but very important law of the universe.

### DEVELOPMENT OF PSYCHOHISTORY

Some literary critics have described Asimov's psychohistory as a reformulation, either for better or worse, of Karl Marx's theory of history (historical materialism) or of Kant's theory of controllable history, though Asimov denied any direct influence. Arguably, Asimov's psychohistory departs significantly from Marx's general theory of history based on modes of production (as distinct from Marx's model of the capitalist economy, where "natural laws" work themselves out with "iron necessity") in that psychohistory is predictive (if only in the sense of involving precisely stated probabilities), and in that psychohistory is extrapolated from individual psychology and even from physics. Psychohistory also has echoes of modernization theory and of work in the social sciences that by the 1960s would lead to attempts at large-scale social prediction and control such as Project Camelot.

Hari Seldon, in other words, Isaac Asimov did not describe any law or equation of Psychohistory, he stated three axioms. Isaac just says Psychohistory will works when fill up the three axioms.

## Chapter-2

Axiom or postulate

In traditional logic, an axiom or postulate is a proposition that is not proved or demonstrated but considered to be either self-evident, or subject to necessary decision. Therefore, its truth is taken for granted, and serves as a starting point for deducing and inferring other (theory dependent) truths.

#### SELF-EVIDENT

In informal speech, self-evident often merely means obvious, but the epistemological definition is more strict. In epistemology (theory of knowledge), a self-evident proposition is one that is known to be true by understanding its meaning without proof.

Some epistemologists deny that any proposition can be self-evident. For most others, the belief that oneself is

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conscious is offered as an example of self-evidence. However, one's belief that someone else is conscious is not epistemically self-evident.

The following propositions are often said to be self-evident:

- 1. A finite whole is greater than any of its parts.
- 2. It is impossible for the something to be and not be at the same time in the same manner.

Certain forms of argument from self-evidence are considered fallacious or abusive in debate. For example, if a proposition is claimed to be self-evident, it is an argumentative fallacy to assert that disagreement with the proposition indicates misunderstanding of it.

It is sometimes said that a self-evident proposition is one whose denial is self-contradictory. It is also sometimes said that an analytic proposition is one whose denial is self-contradictory. But these two uses of the term self-contradictory mean entirely different things. A self-evident proposition cannot be denied without knowing that one contradicts oneself (provided one actually understands the proposition). An analytic proposition cannot be denied without a contradiction, but one may fail to know that there is a contradiction because it may be a contradiction that can be found only by a long and abstruse line of logical or mathematical reasoning. Most analytic propositions are very far from self-evident. Similarly, a self-evident proposition need not be analytic: my knowledge that I am conscious is self-evident but not analytic.

An analytic proposition, however long a chain of reasoning it takes to establish it, ultimately contains a tautology, and is thus only a verbal truth: a truth established through the verbal equivalence of a single meaning. For those who admit the existence of abstract concepts, the class of non-analytic self-evident truths can be regarded as truths of the understanding--truths revealing connections between the meanings of ideas.

Moral propositions can also be said to be self-evident. For example, Alexander Hamilton cited the following moral propositions as self-evident:

- 1. The means ought to be proportioned to the end.
- Every power ought to be commensurate with its object.
- There ought to be no limitation of a power destined to affect a purpose which is itself incapable of limitation.

A famous claim of the self-evidence (Theory of Prediction) of a moral truth is in the United States Declaration of Independence, which states, "We hold these Truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty and the pursuit of Happiness."; philosophically, that proposition is not necessarily self-evident, and the subsequent propositions surely are not. Nevertheless, many would agree that the proposition we ought to treat subjects known to be equal in a certain sense equally in regard to that sense is morally self-evident. Thus, as Thomas Jefferson proposed, one can hold the propositions to be self-evident as the basis for practical, even revolutionary, behaviors.

## Chapter-3

## Compare between few important laws of science

Asimov used the analogy of a gas: But Human is not molecules of gases. Human has a strong mind and intellectual creativity.

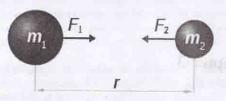
For primary Self-evident or assumption we just Compare between few important laws of science. Such as:

- Newton's law of universal gravitation and Coulomb's law.
- 2. Rutherford's Atomic Model and Planetary Model.

## NEWTON'S LAW OF UNIVERSAL GRAVITATION

Newton's Law of Universal Gravitation states that every massive particle in the universe attracts every other massive particle with a force which is directly proportional to the

product of their masses and inversely proportional to the square of the distance between them.



$$F_1 = F_2 = G \frac{m_1 \times m_2}{r^2}$$

Every point mass attracts every single other point mass by a force pointing along the line intersecting both points. The force is directly proportional to the product of the two masses and inversely proportional to the square of the distance between the point masses:

$$F=G.\frac{m_1m_2}{r^2}$$

where:

\* 'F' is the magnitude of the gravitational force between the two point masses,

\* 'G' is the gravitational constant,

\* 'm, ' is the mass of the first point mass,

\* 'm2' is the mass of the second point mass, and

\* 'r' is the distance between the two point masses.

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#### COULOMB'S LAW

Coulomb's law is a law of physics describing the electrostatic interaction between electrically charged particles. It was studied and first published in 1783 by French physicist Charles Augustin de Coulomb and was essential to the development of the theory of electromagnetism. Nevertheless, the dependence of the electric force with distance (inverse square law) had been proposed previously by Joseph Priestley and the dependence with both distance and charge had been discovered, but not published, by Henry Cavendish, prior to Coulomb's works.

Newton's law of gravitation resembles Coulomb's law of electrical forces, which is used to calculate the magnitude of electrical force between two charged bodies. Both are inverse-square laws, in which force is inversely proportional to the square of the distance between the bodies. Coulomb's Law has the product of two charges in place of the product of the masses, and the electrostatic constant in place of the gravitational constant.

Coulomb's law may be stated in scalar form as follows:

The magnitude of the electrostatic force between two point electric charges is directly proportional to the product of the magnitudes of each of the charges and inversely proportional to the square of the distance between the two charges.



(A graphical representation of Coulomb's law)

The scalar form of Coulomb's law will only describe the magnitude of the electrostatic force between two electric charges. If direction is required, then the vector form is required as well. The magnitude of the electrostatic force (F) on a charge (q1) due to the presence of a second charge (q2), is given by

$$F = k_e \frac{q_1 q_2}{r^2}$$

Where r is the distance between the two charges and 'ke' a proportionality constant. A positive force implies a repulsive interaction, while a negative force implies an attractive interaction.

The proportionality constant "k,", called Coulomb's constant (sometimes called Coulomb's force constant).

#### RUTHERFORD'S ATOMIC MODEL

Rutherford's Atomic Theory was a revolutionary theory regarding the nature of atomic structure that varied significantly from past theories on the same subject matter. In fact, although the Rutherford Atomic Theory was first posited in 1911, many facets of it are still accepted by the majority of the scientific community. He compared his Atomic model to the planetary model, but actually its not, 20

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it's had too much limitation to complete the planetary model. He says a number of tiny electrons circling around the nucleus like planets around the sun.

#### KEY POINT OF RUTHERFORD ATOMIC MODEL

- The electron cloud of the atom does not influence alpha particle scattering.
- A large number of the atom's charges, up to a number equal to about half the atomic mass in hydrogen units, are concentrated in very small volume at the center of the atom. These are responsible for deflecting both alpha and beta particles.
- 3. The mass of heavy atoms such as gold is mostly concentrated in the central charge region, since calculations show it is not deflected or moved by the high speed alpha particles, which have very high momentum in comparison to electrons, but not with regard to a heavy atom as a whole.

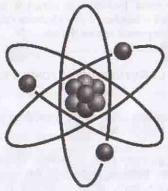


Fig: A stylized representation of the Rutherford model of a lithium atom (nuclear structure anachronistic, number of tiny electrons circling around the nucleus like planets around the sun.)

## Chapter-4

**Applied Psychohistory** 

Establishing the psychohistory through the Theory of Prediction and Kinetic theory of Gases, Asimov used the analogy of a gas: an observer has great difficulty in predicting the motion of a single molecule in a gas, but can predict the mass action of the gas to a high level of accuracy. Isaac also discuss Quantum Mechanics in psychohistory.

Asimov applied this concept to the population of his fictional Galactic Empire, which numbered a quintillion.

His first axiom states the population whose behavior was modeled should be sufficiently large.

But it does not describe how many people will be sufficiently large.

We can represent this sufficiently large group by donated, "Ny".

Let where 'γ' (Gamma) is Isaac constant or Isaac Galactic Empire constant.

And "N" (bold 'N') is number of Population of Galactic Empire.

Now consider an "Absolute Foundation" which fulfills the three axioms of Asimov's Psychohistory. This absolute foundation is a large community of people where population is sufficiently large,  $N\gamma$ . That the population should remain in ignorance of the results of the application of psychohistorical analyses and That Human Beings are the only sentient intelligence in the Galaxy.

#### DEFINITION

Applied Psychohistory is an extension of combine science that can be apply to human beings on earth, (In addition) to make (nearly) exact predictions of the shared application of large groups of people such as: community, country, and earth.

#### TAXONOMY OF APPLIED PSYCHOHISTORY

Then Applied Psychohistory is sorted in four segments:

- 1. Asimov's Axioms.
- 2. Theory of Prediction
- 3. Hatashe's Hypothesis.
- 4. Mental Science.

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#### ASIMOV'S AXIOMS

We know that Isaac Asimov has given three axioms:

- That the population whose behavior was modeled should be sufficiently large.
- That the population should remain in ignorance of the results of the application of psychohistorical analyses.
- 3. That Human Beings are the only sentient intelligence in the Galaxy.

#### THEORY OF PREDICTION

We hold these truths to be Self-Evident, that all men are created equal, that they are endowed by their Creator with certain unalienable Rights that among these are Life, Liberty and the Pursuit of Happiness.

Asimov presents the Prime Radiant, As well as being interactive, employs a type of colour-coding to equations within itself for ready comprehension by Psychohistorians: 01. Seldon Black, 02. Speaker Red, 03. Deviation Blue, 04. Notation Green, 05. Projection Purple.

#### HATASHE'S HYPOTHESIS

Hatashe's Hypothesis is classified in three categories:

- 1. Hatashe's Extension.
  - 2. Hatashe's Law.
  - 3. Wiki Process theory.

#### HATASHE'S EXTENSION

Hatashe's Extension: The extension has few statements such as:

- A community consists of only sentient intelligence know as humans dispersed throughout a sufficiently large populations. Psychohistory considers a man or woman as a half human or half creature.
- The performances of the designers are negligible compared to the total performance of the application. Similarly population to the community.
- The humanity of the community are separately identical and have educational and strong work abilities.
- The designers should in random think with high work abilities.
- The psyche and accepted good judgment between the designers may vary, but a human (designers) should consist of two half human with matching (nearly) understanding and exertion capabilities.
- Everybody can move freely in understanding, in physical and self-governing to each others.
- Emotional impact may occur between the designers, but make sure it should not put together outcome on the residents of the communities.
- The behavior and performance of the population should be recorded by the designers, but the population should remain in ignorance of the recordings, as well as results of the Application.
- Device, time and designers of the application should be blueprints on which dependance of total population and/or character of environment of the region.

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#### HATASHE'S LAWS

According to the three axioms of Isaac Asimov and Hatashe's hypothesis of extension, their three laws are establishing:

- In an absolute foundation; certainly, sufficiently large peoples will attentively work in leading development application for human being and do not thrive in isolation.
- The Installation Momentum of the application in sustainable times is directly proportional to the summation of Isaac Ratio and Seldon Ratio;
  - (a) Isaac Ratio: the ratio between total designers of the application and number of designers will establish in office their absolute performance.
  - (b) Seldon Ratio: the ratio between numbers of hypothetical dormant sentient designers and the total designers of the application.
- The Sustainable Installation time is directly proportional to the total Time of installation and inversely proportional to the value of Installation Momentum in sustainable times.

#### **EXPLAIN OF LAWS**

#### FIRST LAW

In an absolute foundation certainly, sufficiently large groups of people will attentively work in leading

development application for human being and do not thrive in isolation.

Actually this is the first law is the summary of Isaac Asimov three axioms. In other words it is a ground-breaking theory and code of the Psychohistory.

#### SECOND LAW

the Installation Momentum  $(F_i)$  of the application in sustainable times (t) is directly proportional to the summation of Isaac Ratio  $(I_R)$  and Seldon Ratio  $(S_R)$ ;

Isaac Ratio (IR)

(a) Isaac Ratio (I<sub>R</sub>): the ratio between total designers (N) of the application and number of designers (n) establish in office their absolute performance.

$$I_R = \frac{N}{n} \dots (i)$$

Seldon Ratio (S ,)

(b) Seldon Ratio (S<sub>R</sub>): the ratio between numbers of hypothetical dormant sentient designers (N-n) and the total designers (N) of the application;

$$S_R = \frac{N-n}{N} \dots (ii)$$

So, the second law in mathematically,

$$F_{r} \alpha I_{R} + S_{R}$$

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$$\Rightarrow F_{I} = S\rho \times (I_{R} + S_{R})$$

$$\Rightarrow F_t = \operatorname{Sp}\left(\frac{N}{n} + \frac{N-n}{N}\right) \dots$$
 (iii)

"N" is totaling number of Designers of Application. " $\rho$ " is a Galactic Constant. Applicable when "N = N $\gamma$ ". Seldon Constant

"S" is a constant of Seldon plan or Seldon Constant. Consider its value is 8.94 by several examinations. (Authentic value is 8.943518519)

"F," is value of Install in sustainable Installation times (t).

So, 
$$F_i = S(\frac{N}{n} + \frac{N-n}{N})$$
....(iv)

Several times, the experiment successes when  $20\% \le n \le 60\%$  of total designers of Application (N). The value of  $n \ge 60\%$  is complicated and  $n \ge 70\%$  to 90% is so difficult and may impractical in reality.

#### THIRD LAW

the Sustainable Installation time (t) is directly proportional to the total Time of installation (T) and inversely proportional to the value of Installation Momentum in sustainable times (F<sub>1</sub>);

So, in mathematically,

And

$$t \alpha \frac{1}{F_{\tau}}$$
.....(vi)

Compare the equation (v) and (vi), we can write =>

$$t \alpha \frac{T}{F_{t}}$$

$$\Rightarrow t = S \times \frac{T}{F_{t}}$$

'T' total expected duration of the Application.

"S" is a constant of Seldon plan or Seldon Constant. Its value is 8.94.

"F," is value of Installation Momentum in sustainable times.

"t" minimum sustainable Installation times.

$$t = \frac{ST}{F_1}$$
 (vii)

Seldon, in other words, Isaac Asimov considered 1000 years Installation times (T) in his plan but in realistic it's difficult. So in experiment; I would consider a minimum of 20 years to 100 years. The value of 'T', 'N', and 'N'&'n' is associated each others (not in depended) on design of application. And application is very important. (Bold 'N' is total population)

## Chapter-5

Wiki Process theory

Few scientist say, Bernoulli predicted the kinetic theory of Gases to compare the Gas molecules to the billiard balls in random motion, bouncing off each other and off sides of the pool table.

It is necessary to mention, in using wikipedia Project as a steady application and comparing it to the Kinetic theory, calculating and experimenting with others projects more than thousand times. applied the Newton's Forward and Newton's backward formula to resolve or conclude an assumption of the value of installation time, number of designers, number of population of the project/ application area and etc. In several experiments of psychohistory, using a minimum of ten years of the application of installation times.

#### THEORY OF JIMMY SANGER

"When a requirement is moving up in the sufficiently large number of population, a design can be relevant according to set of laws of Psychohistory (a) hypothetically increase the requirements in the population, and/or (b) be supposed to create a sustainable understanding of the application to the population."

## RATE OF INSTALLATION MOMENTUM AND BREAKDOWN

Percentage of achievement (Installation Momentum) and breakdown within expected time (total duration):

"In experiment of Second and third law, its provided evidence the rate of breakdown  $(f_T)$  is directly proportional to the summation of Isaac Ratio and negative sign of Seldon Ration;

In mathematically,

$$f_T \alpha I_R + (-S_R)$$

$$\Rightarrow f_T = S\rho \times (I_R - S_R)$$

$$\Rightarrow f_T = S\rho \left(\frac{N}{n} - \frac{N - n}{N}\right)$$

Where,

"f," Rate of breakdown (fail)

"N" is total number of Designers of Application.

"p" is a Galactic Constant. Applicable when " $N = N\gamma$ ".
"S" is a constant of Seldon plan or Seldon Constant.

Consider its value is 8.94 by several examinations. (Authentic value is 8.943518519)

"F," is value of Installation Momentum in sustainable Installation times (t).

So, 
$$f_T = S(\frac{N}{n} - \frac{N-n}{N})$$
....(iv)

Percentage of achievement (Installation Momentum) of the Application (F or  $F_{\tau}$ ) within expected time (T) is,

$$F = 100 - F_1$$
 ..... (ix)

#### FIRST LAW AND WIKI PROCESS THEORY

Certainly, sufficiently large groups of people will attentively work in leading development application for human being and do not thrive in isolation. It's so much more simple and direct like as Newton's third law of motion.

It is nature of human beings that certainly, they will attentively work in leading development application for human beings. The best example is Wikipedia. Day by day all knowledge of civilization are stored up in here by large number of voluntary wikipedian, and they are working without pay.

In practical, if we consider Wikipedia as an application and wiki territory as an absolute foundation, which is sufficiently large, so it follows the three axioms, three law and theory of prediction.

Several times I have tested the hypothesis with many applications to consider and Wikipedia as a constant application.

#### THE WIKIPEDIA REVOLUTION

Wikipedia, the free encyclopedia. The earliest known proposal for an online encyclopedia was made by Rick Gates in 1993, but the concept of an open source webbased online encyclopedia was proposed a little later by Richard Stallman around 1999. The Wikipedia, was formally launched on 15 January 2001 by Jimmy Wales and Larry Sanger using the concept and technology of a wiki pioneered by Ward Cunningham. Initially Wikipedia was created as a complement and 'feeder' to Nupedia, an expert-written online encyclopedia project, in order to provide an additional source of draft articles and ideas. It quickly overtook Nupedia, growing to become a large global project, and originating a wide range of additional reference projects. Today Wikipedia includes over 14 million freely usable articles in hundreds of languages worldwide, and content millions of contributors. As of 21 February 2010 there are approximately 3,200,452 articles only in the English Wikipedia, all created by the world wide wikipedian with cost free service. Wikipedians are people who write and edit the pages for Wikipedia as opposed to readers who simply read the articles by creating an account in wikipedia. So, Anyone can be a Wikipedian. The number of named accounts has grown to millions (currently exactly 11,694,774). Most account holders are not regular contributors, however. About 250,000 new accounts are created every month, and these numbers are growing. About 300,000 editors have edited Wikipedia more than 10 times. Approximately the same number,

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300,000 editors, edit Wikipedia every month; out of those, about 50,000 do more than 5 edits and 5,000, more than 100 edits.

#### A SORT STATISTICS OF WIKIPEDIA

(up to 21 February 2010)

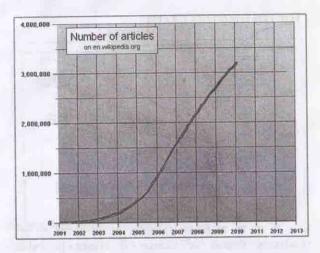
At a rate of 600 words a minute, twenty-four hours a day, a person could read nearly 27,000,000 words in a month. In the month of July 2006, Wikipedia grew by over 30,000,000 words.

Registered users	11,715,703
Total Pages	19,509,213
Page statistics	
Content pages	3,200,521
Pages (All pages in the Wiki, including talk pages, redirects, etc.)	19,509,213
Uploaded files	867,034
Edit statistics	
Page edits since Wikipedia was set up	368,353,341
Average edits per page	18.88
Estimated job queue length	2
User statistics	
Registered users	11,715,703
Active registered users (Users who have performed an action in the last 30 days)	160,951

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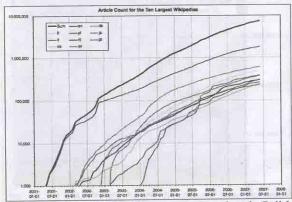
Bots (list of members)	608
Administrators (list of members)	1,718
Bureaucrats (list of members)	35
Check users (list of members)	39
Stewards (list of members)	0
Account creators (list of members)	64
Importers (list of members)	0
Transwiki importers (list of members)	0
IP block exemptions (list of members)	413
Oversighters (list of members)	41
Founder (list of members)	1
Rollbackers (list of members)	3,259
Confirmed users (list of members)	69
Autoreviewers (list of members)	1,183
Edit filter managers (list of members)	100

#### WIKIPEDIA GROWTH



Actual number of articles on en.wikipedia.org (thick darkblue line) compared with logistic models that lead to a maximum of 3, 3.5 or 4 million articles (thin light-blue lines)

#### TOP TEN WIKIPEDIA GRAPH



Codes: en - English • de - German • fr - French • pl - Polish • ja - Japanese • it - Italian • nl - Dutch • pt - Portuguese • es - Spanish • sv - Swedish.

## Chapter-6

## Basic Seldon Equations of Psychohistry

Or EQUATIONS OF PRIME RADIANT
There are six Basic Seldon Equations of Psychohistry:

1. 
$$F_t = Sp\left(\frac{N}{n} + \frac{N-n}{N}\right)$$

2. 
$$F_t = S\left(\frac{N}{n} + \frac{N-n}{N}\right)$$

3. 
$$t = \frac{ST}{F_1}$$

4. 
$$f_T = Sp \left( \frac{N}{n} - \frac{N-n}{N} \right)$$

5. 
$$f_T = S\left(\frac{N}{n} - \frac{N-n}{N}\right)$$

6. 
$$F = 100 - F_1$$

