

# Psychohistory: a primer

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## Abstract

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*Keywords:* Psychohistory, Encyclopedia

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## 1. Introduction

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## 2. Foundations

Psychohistory depends on the idea that, while one cannot foresee the actions of a particular individual, the laws of statistics 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 with the kinetic theory can predict the mass action of the gas to a high level of accuracy [1]. Seldon applied this concept to the population of the Galactic Empire, which numbered one quintillion, by defining two axioms:

- the population whose behaviour was modelled should be sufficiently large to represent the entire society.
- the population should remain in ignorance of the results of the application of psychohistorical analyses because if it is aware, the group changes its behaviour.

Ebling Mis added these axioms:

- there would be no fundamental change in the society human reactions to stimuli would remain constant.

Golan Trevize in Foundation and Earth added this axiom:

- humans are the only sentient intelligence in the galaxy.

## 2.1. Probability and Psychohistory

Psychohistory relies on the Seldon central limit theorem<sup>1</sup>:

$$\sqrt{n} \frac{\bar{X}_n - \mu}{\sigma} \rightarrow \mathcal{N}(0, 1), \quad (1)$$

where ...

## 2.2. Features

### 2.2.1. Table

Below is Table 1.

Table 1: Example

Substance	Subcritical °C	Supercritical °C
Hydrochloric Acid	12.0	92.1
Sodium Myreth Sulfate	16.6	104
Potassium Hydroxide	24.7	

### 2.2.2. Figures

Below is Fig. 1.



Figure 1: Typst logo - Credit: @fenjalien

### 2.2.3. Subfigures

Below are Fig. 2a and Fig. 2b, which are part of Fig. 2.

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<sup>1</sup>It is actually the classical central limit theorem 😊



(a)



(b)

Figure 2: (a) Left image and (b) Right image

## A. Appendix A

### A.1. Figures

In Fig. A.1



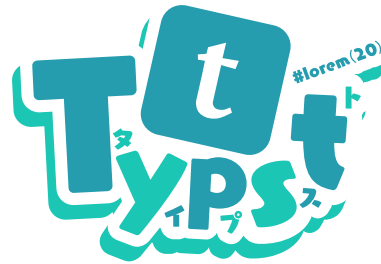
Figure A.1: Books cover

### A.2. Subfigures

Below are Fig. A.2a and Fig. A.2b, which are part of Fig. A.2.



(a)



(b)

Figure A.2: (a) Left image and (b) Right image

### A.3. Tables

In Table A.1

Table A.1: Example

Substance	Subcritical °C	Supercritical °C
Hydrochloric Acid	12.0	92.1
Sodium Myreth Sulfate	16.6	104
Potassium Hydroxide	24.7	

### A.4. Equations

In Eq. (A.1)

$$y = f(x) \tag{A.1}$$

$$y = g(x)$$

## References

- [1] H. Seldon, “The mathematics of Psychohistory,” *Universal Journal of Psychohistory*, pp. 1–10, 1210.