

## Lecture 5, Part II: Ch 2, §3, Non-Systematic Processes; §4 “Statistical Heuristic Structure”

Various Student Questions:

[0:00]

- Question about how the systematic intersects with the nonsystematic.
- If the universe were a systematic process, a non-systematic process could *not* emerge.
- But, on the other hand, systematic processes can emerge out of non-systematic processes.
- Discussion of the gradual emergence of systematic processes from an initially nonsystematic universe. (Movement from grand chaos to patches of systematic orderliness.)

[6:00]

- Question about restoring a systematic process that has gone awry.

[8:07]

- Question as to whether integers and irrational numbers can be considered systematic and nonsystematic, respectively.

[12:29]

- Question. When we talk about the anticipatory nature of the heuristic, does this mean are we anticipating those conditions under which the object of observation must be put so that it becomes intelligible to us?
  - The various different heuristics anticipate different kinds of intelligibilities. Discussion.

[14:30]

- Question about whether a process can be non-systematic with respect to some system A and systematic with respect to some system B?
  - Yes, actually. The question of higher level viewpoints and explanatory genera arises later in Chapter 8.

[16:00]

- Model of a Non-systematic process.
- Characterized by sporadic appearances; no intelligible order.
- Whether or not a process is systematic or non-systematic must ultimately be determined by using empirical methods, working out implications of the alternatives, and gathering supporting conditions.

[18:07]

- Where is Lonergan headed?
- Western culture absorbed statistics only with difficulty.
- Statistics seen as a cloak for ignorance or an instrumental tool for managing large populations.
- *Versus* statistics as revealing something important about reality that cannot be known in some other manner.
- The Canon of Statistical Residues and why statistical inquiry is needed.

[23:20]

- § 4. Statistical Heuristic Structures.
- The difference between the classical mentality and the statistical mentality.
- What is Statistics?
  - Statistical heuristic seeks the intelligibility of *probability* – the *ideal* frequencies – of events in particular times & places.
  - Classical heuristic seeks correlations that hold for all times and all places.
  - Lonergan pays attention to the “deeds” – the actual practices of statistical investigators, in order to determine the meaning and intelligibility of these practices.

[25:13]

- Statistical investigations as the method of determining *states of populations*.
- The “state” of a population consists of a list (“schedule”) of probabilities for characteristic categories of events.
- Populations are concrete – in this place during that time period.

[27:57]

- Examples of statistical populations. Emphasis on the frequency of events, not things.
- Lonergan uses the term “co-incidental aggregates” to refer to populations
  - Unity of spatial juxtaposition or temporal succession, or both.
  - No single law or set of laws relating them to each other.
  - Implications of viewing the universe as a statistical population.

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- Statistics and Counting.
  - Questions answered by statistical method: How many, how often, how frequently?
  - The conditions for being able to do the counting.
  - Problems encountered in attempting to count.
  - Limited scientific value of counting.

[37:18]

- Statistical method: Sampling instead of counting everything.
- Counting is not the ultimate objective of statistical method.
- Counting determines the actual frequencies, for the sake of then determining ideal frequencies, from which actual frequencies vary non-systematically
- Statistical method as *going beyond* Actual Relative Frequencies to Ideal Relative Frequencies
- Ideal Relative Frequencies are called probabilities.

[43:07]

- Illustration from botany: Mendel’s plant genetics.
- Supplied insights that met problems that arose within Darwinian Evolutionary theory
- Mendel’s insight leaps from actual to ideal relative frequencies.

[46:15]

- Statistical method aims at the ideal frequencies of non-systematic processes in populations that are not completely systematic.