

The Red Bead Experiment



Adrian Bass
Eric Budd

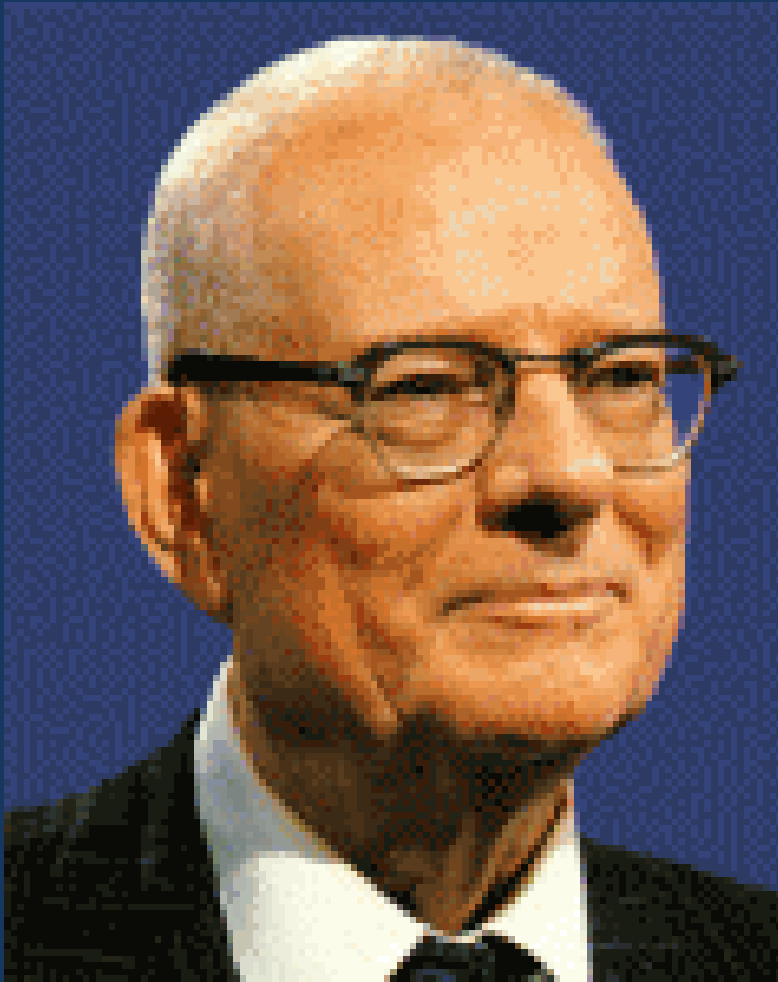
MICHIGAN LEAN CONSORTIUM
2014 CONFERENCE

"PEOPLE: THE HEART OF LEAN"

Aug. 7-8, Traverse City, MI

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W. Edwards Deming

1900 -1993



*“Quality is everyone's
responsability.”*

Dr.W.Edwards Deming

<http://100qualityquotes.wordpress.com/>

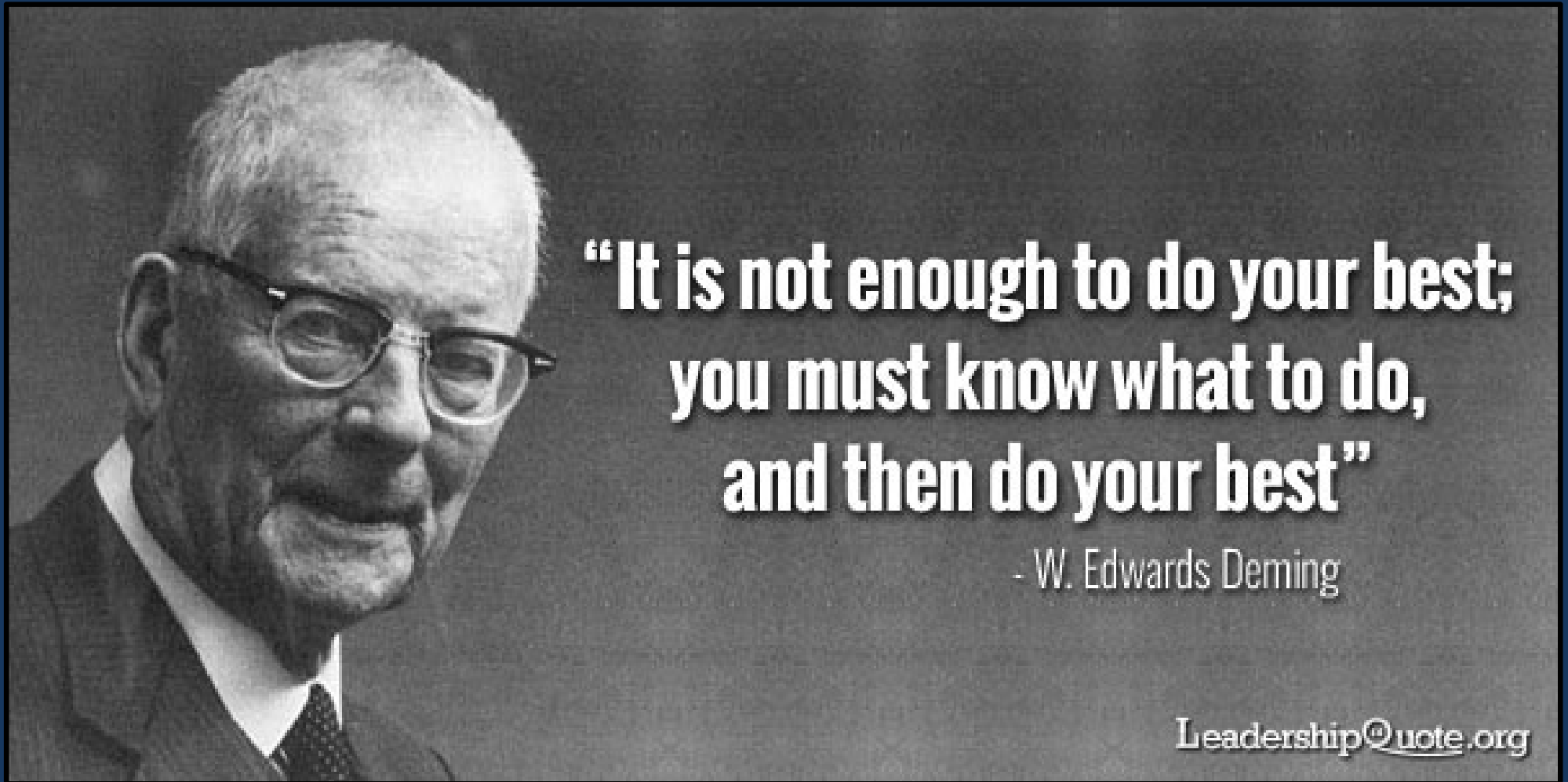
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*“You can have quality without lean, but
you cannot achieve lean without quality.”*

Jim Manley,

July 2014 CQI Learning Lunch





**“It is not enough to do your best;
you must know what to do,
and then do your best”**

- W. Edwards Deming

Leadership@quote.org

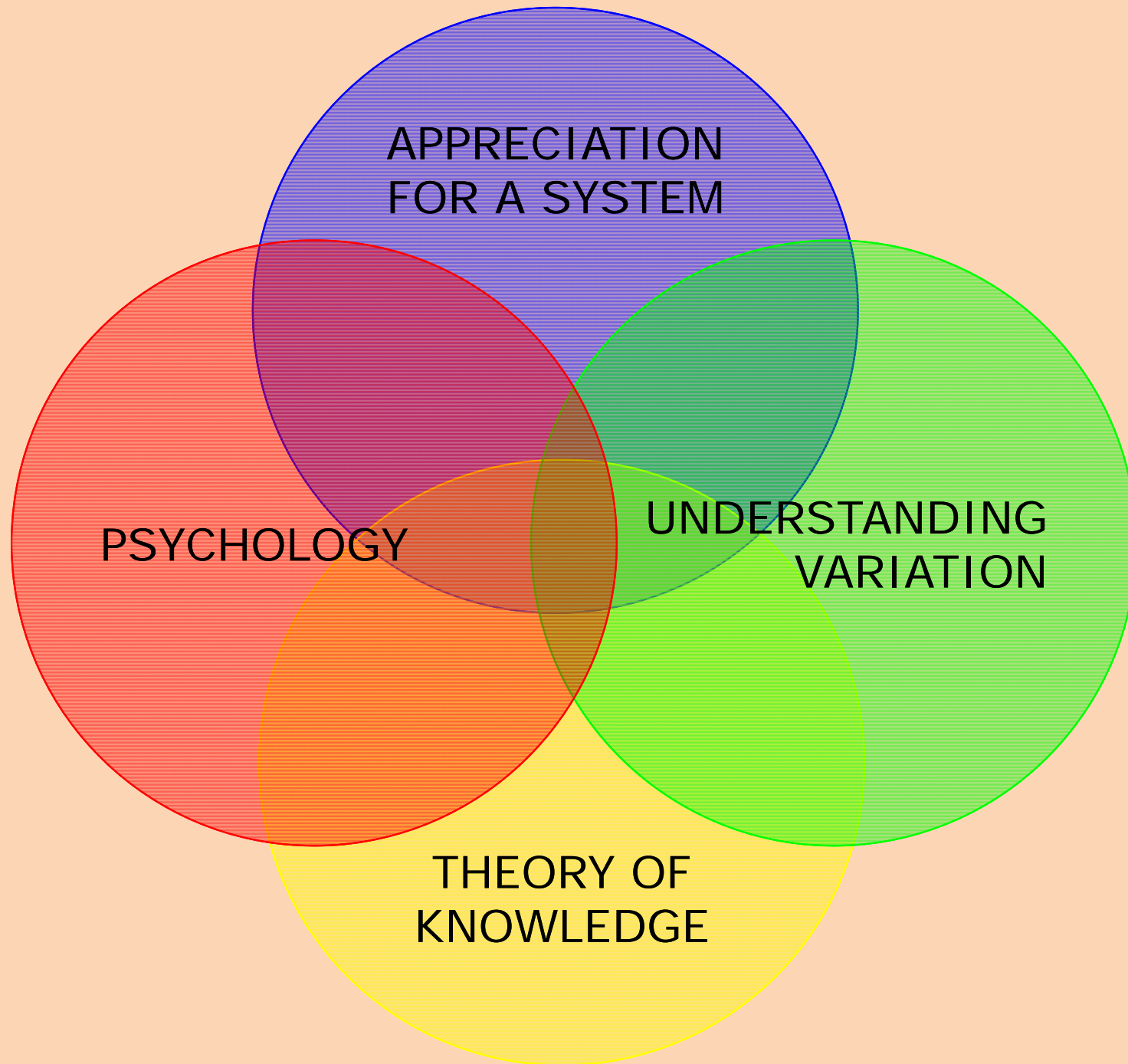
W. EDWARDS
DEMING



THE NEW
ECONOMICS

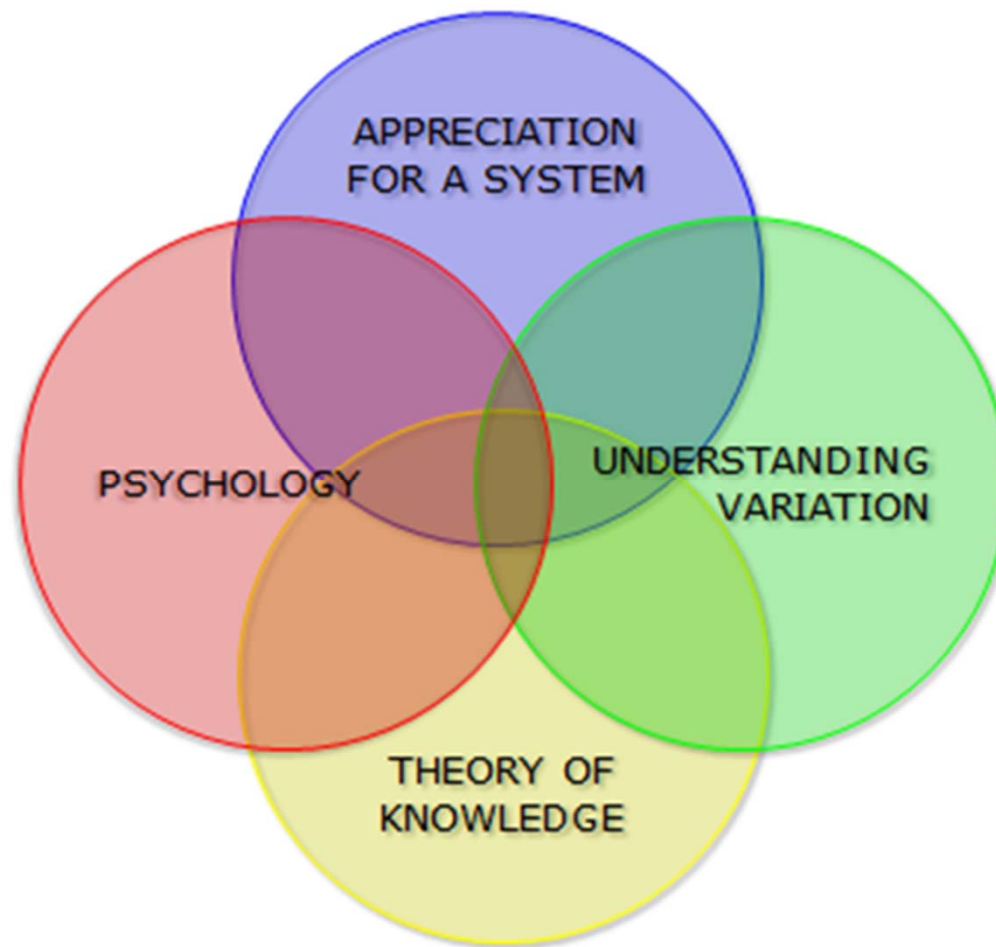
FOR INDUSTRY, GOVERNMENT, EDUCATION

Second Edition

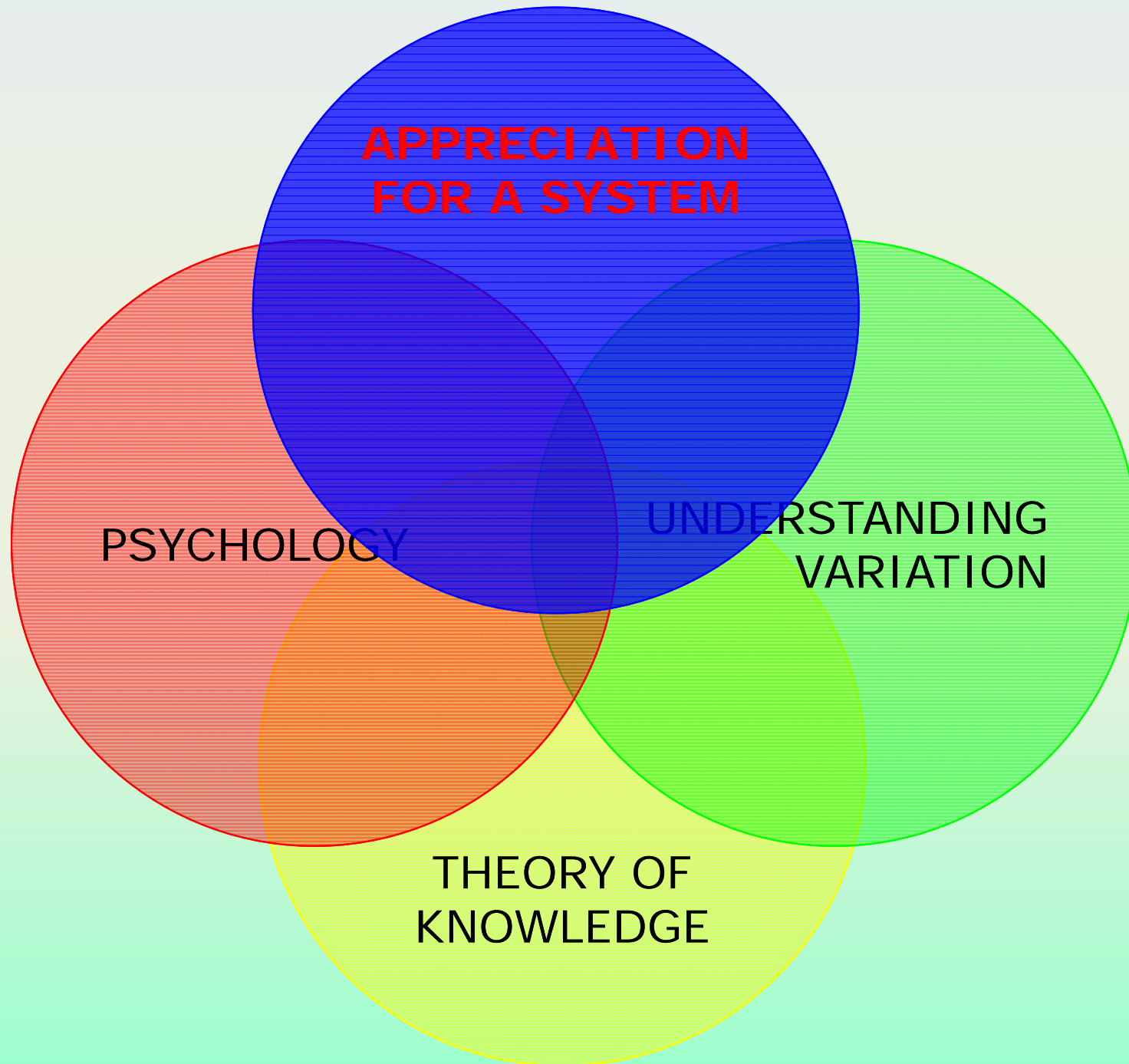


Deming's System of Profound Knowledge

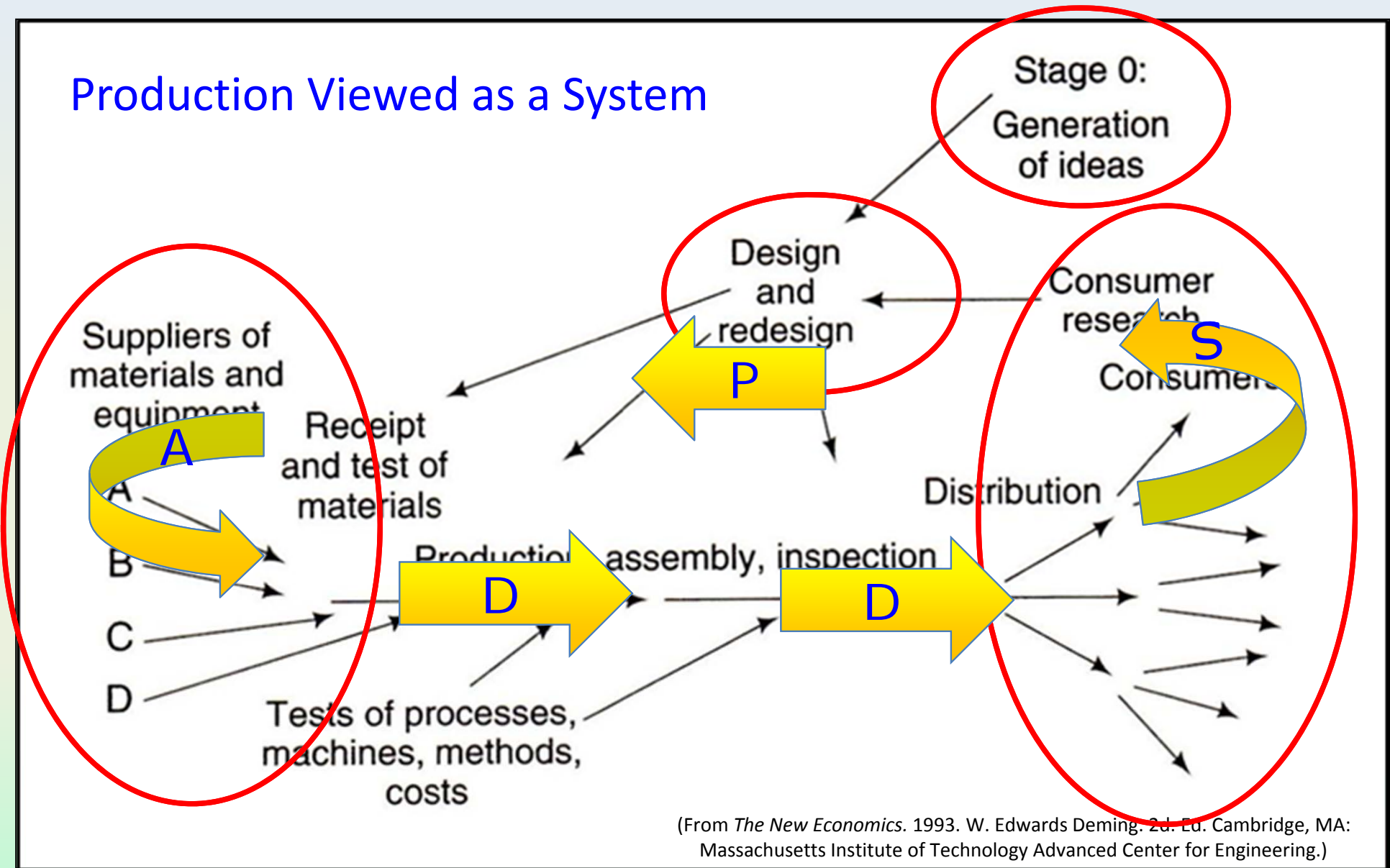
“The various segments of the system . . . cannot be separated. They interact with each other. For example knowledge about psychology is incomplete without knowledge of variation.”



Deming's System of Profound Knowledge



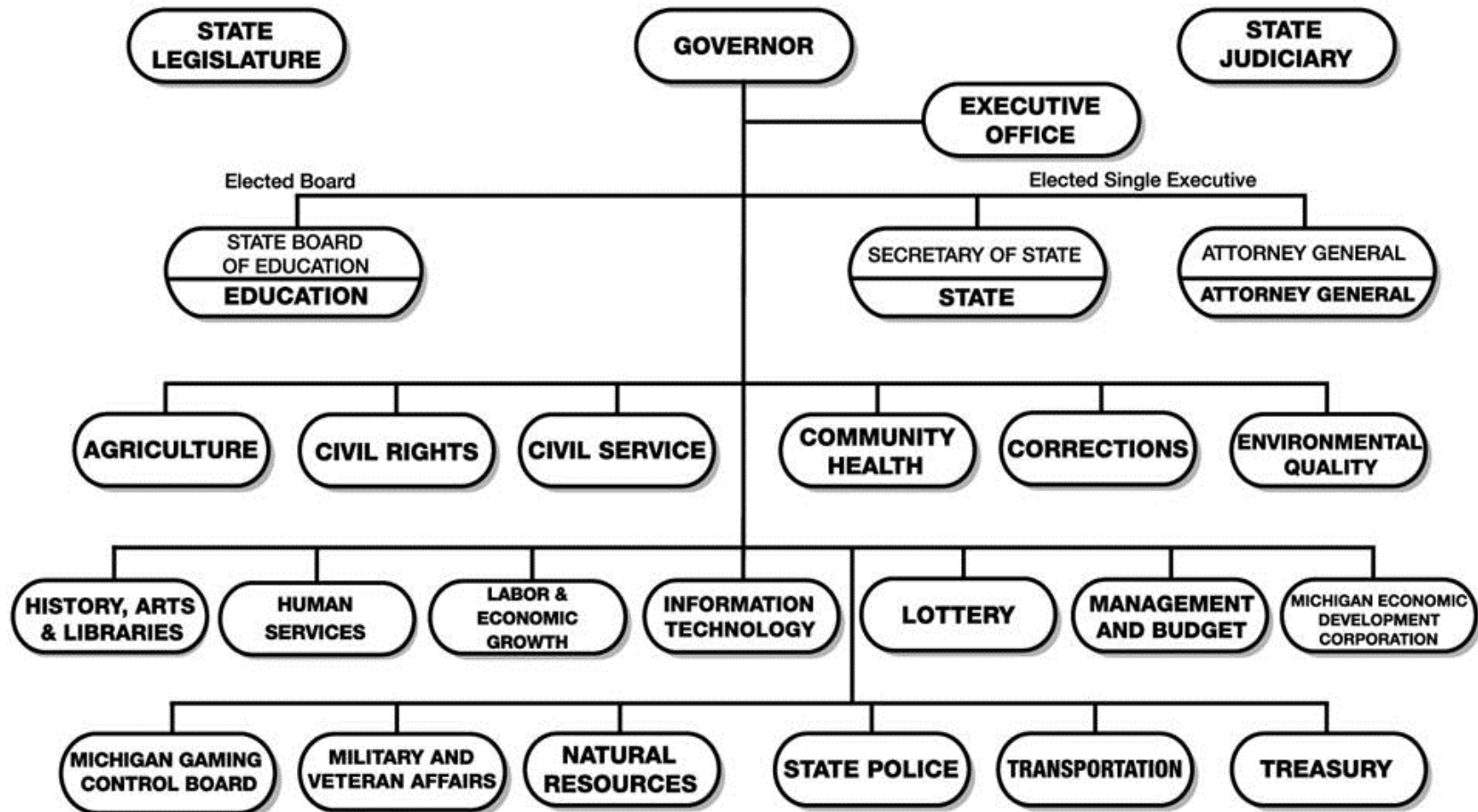
Production Viewed as a System



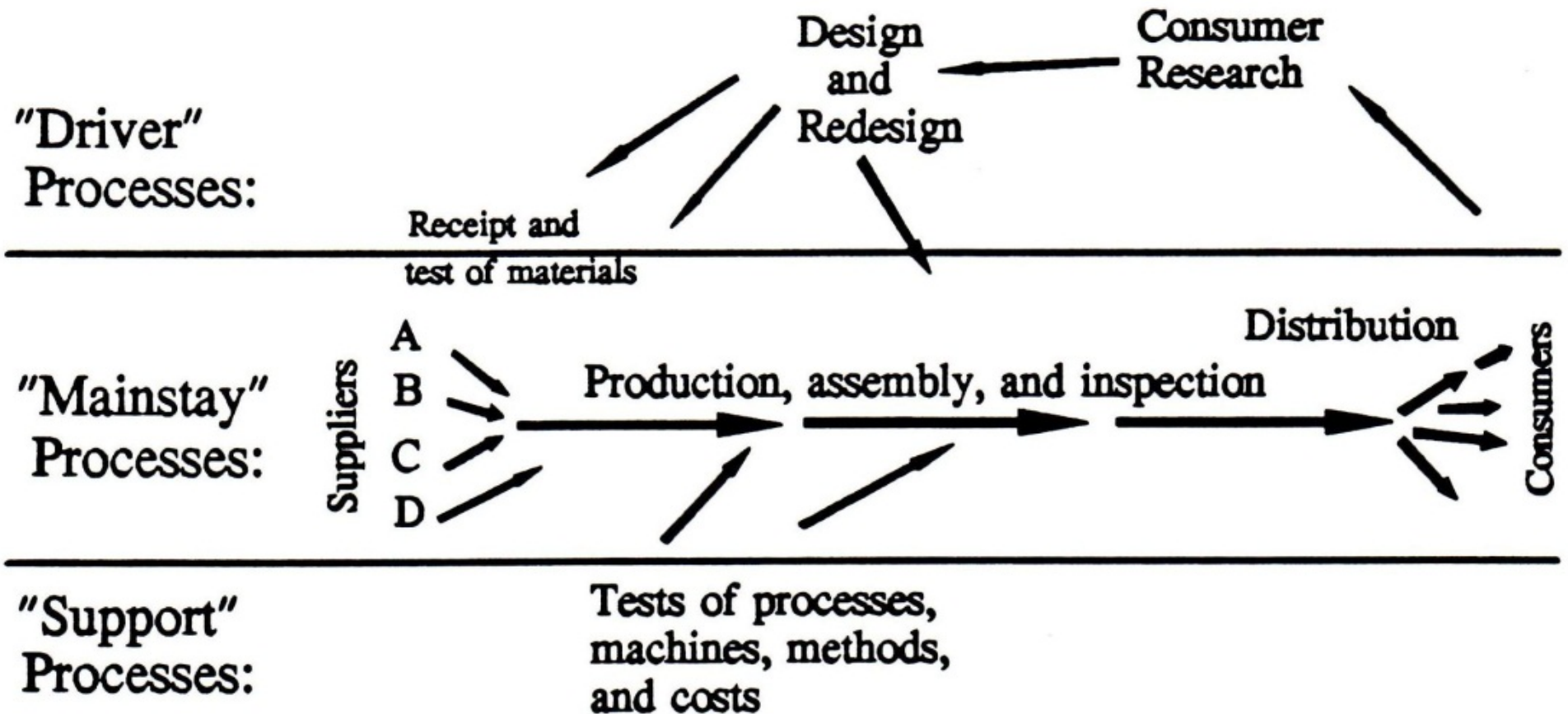
A system is a network of interdependent components that work together to accomplish the aim of the system



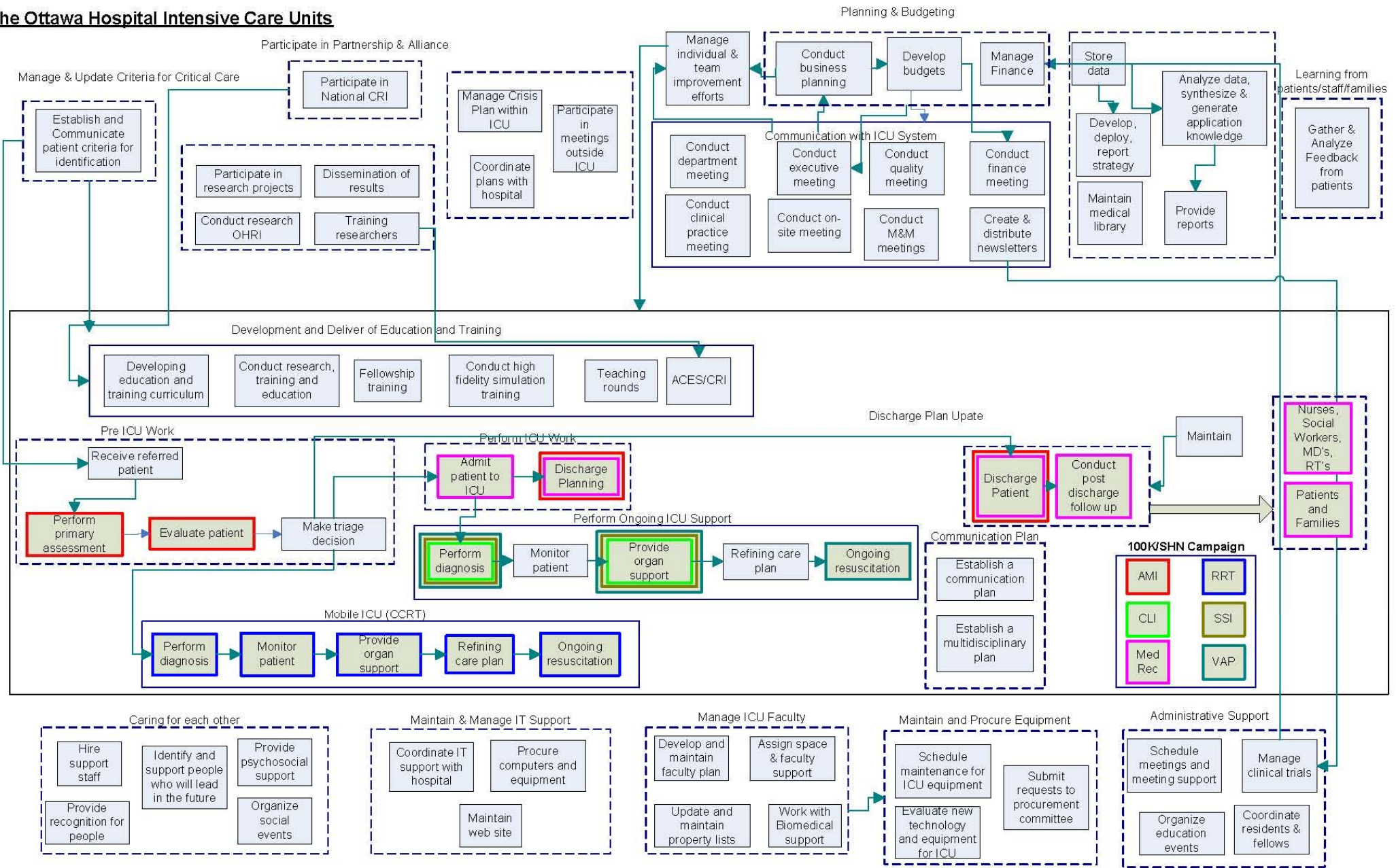
State Government



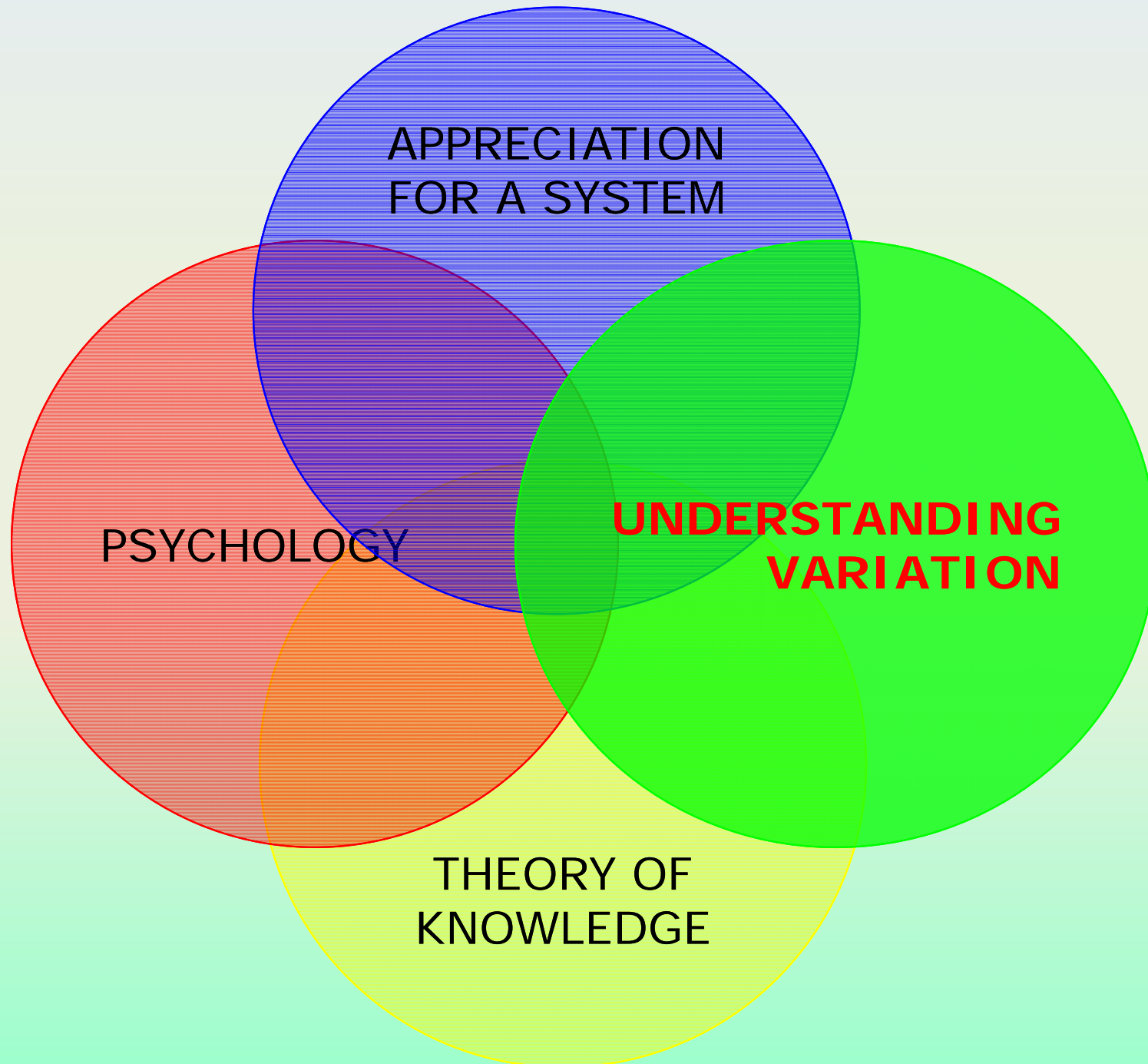
Production Viewed as a System with Three Types of Processes Identified

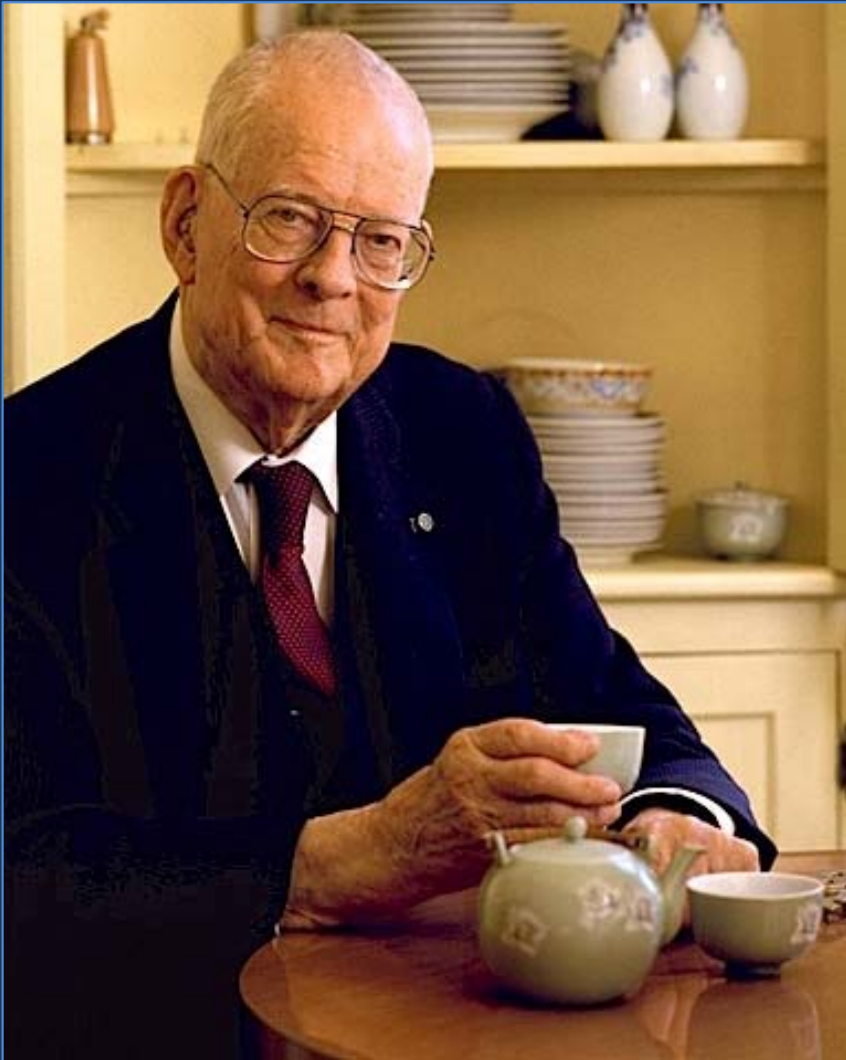


The Ottawa Hospital Intensive Care Units



Deming's System of Profound Knowledge

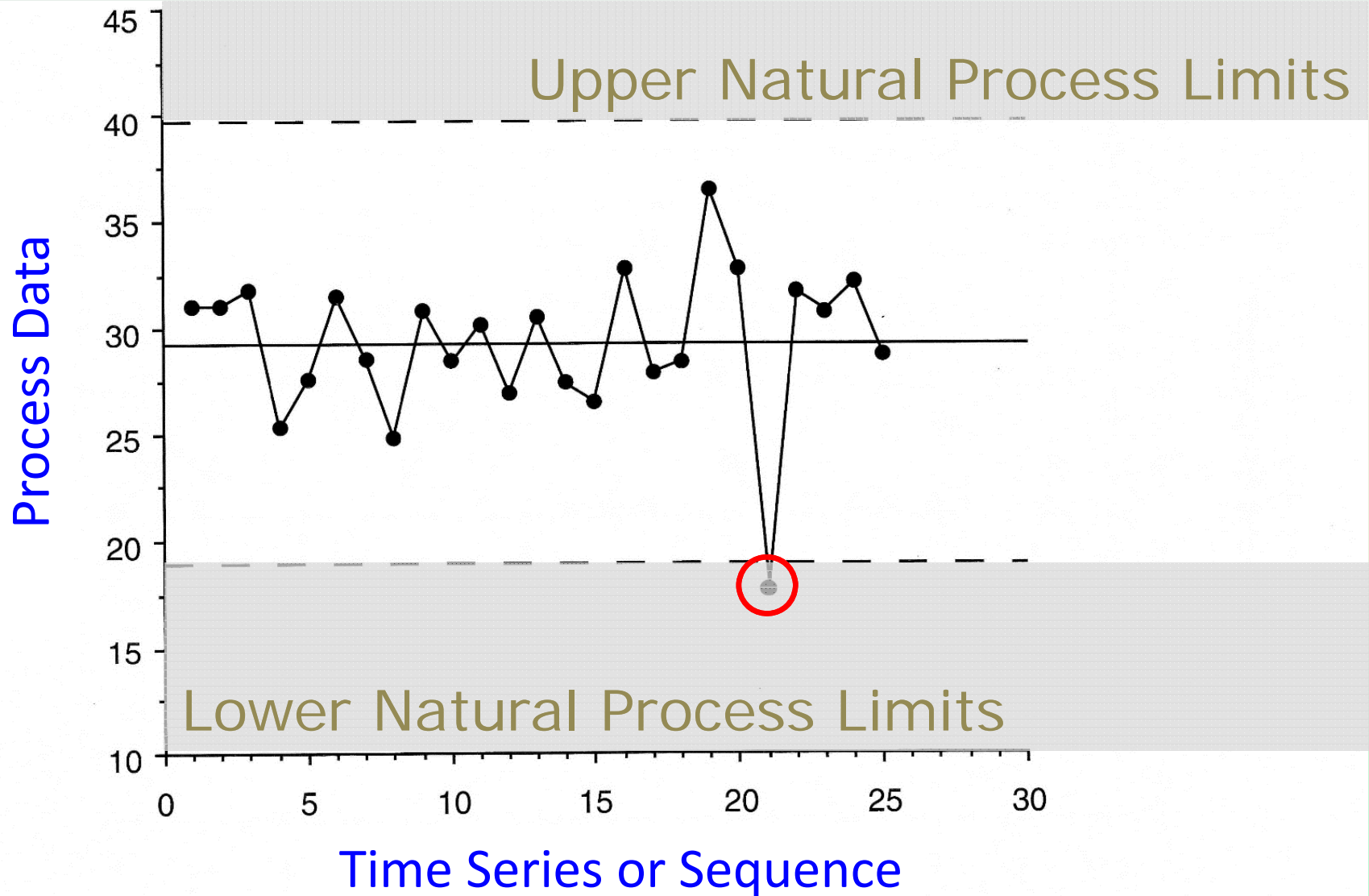


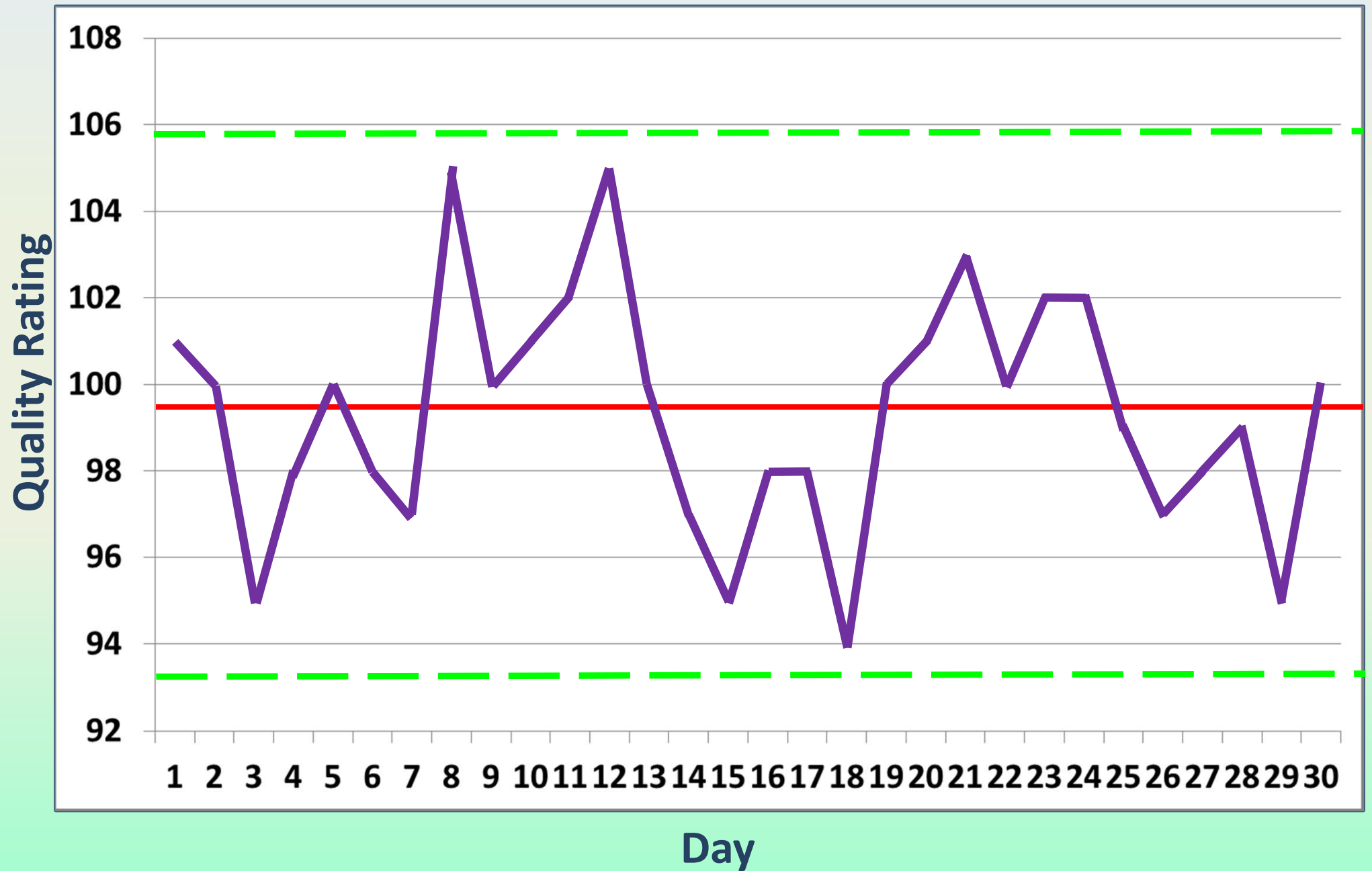


"If I had to reduce my message for management to just a few words, I'd say it all had to do with reducing variation."

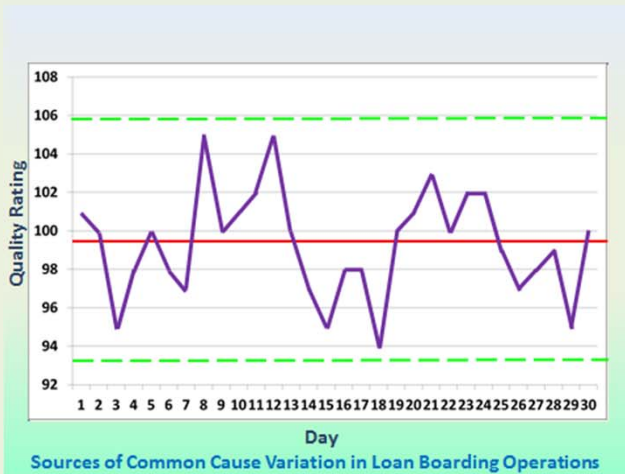
W. Edwards Deming

The Shewhart Control Chart





Sources of Common Cause Variation in Loan Boarding Operations



Number of items requiring interpretation

Level of standardization in work received

Clarity of language used to specify terms

Helpfulness of leader

Cooperation from internal customers

Skill level of trainer

Number of errors in work received

Complexity of work to be done

Percent of work to be performed manually

Clarity of process steps

Percent of work to do that is automated

Volume of work assigned in a day

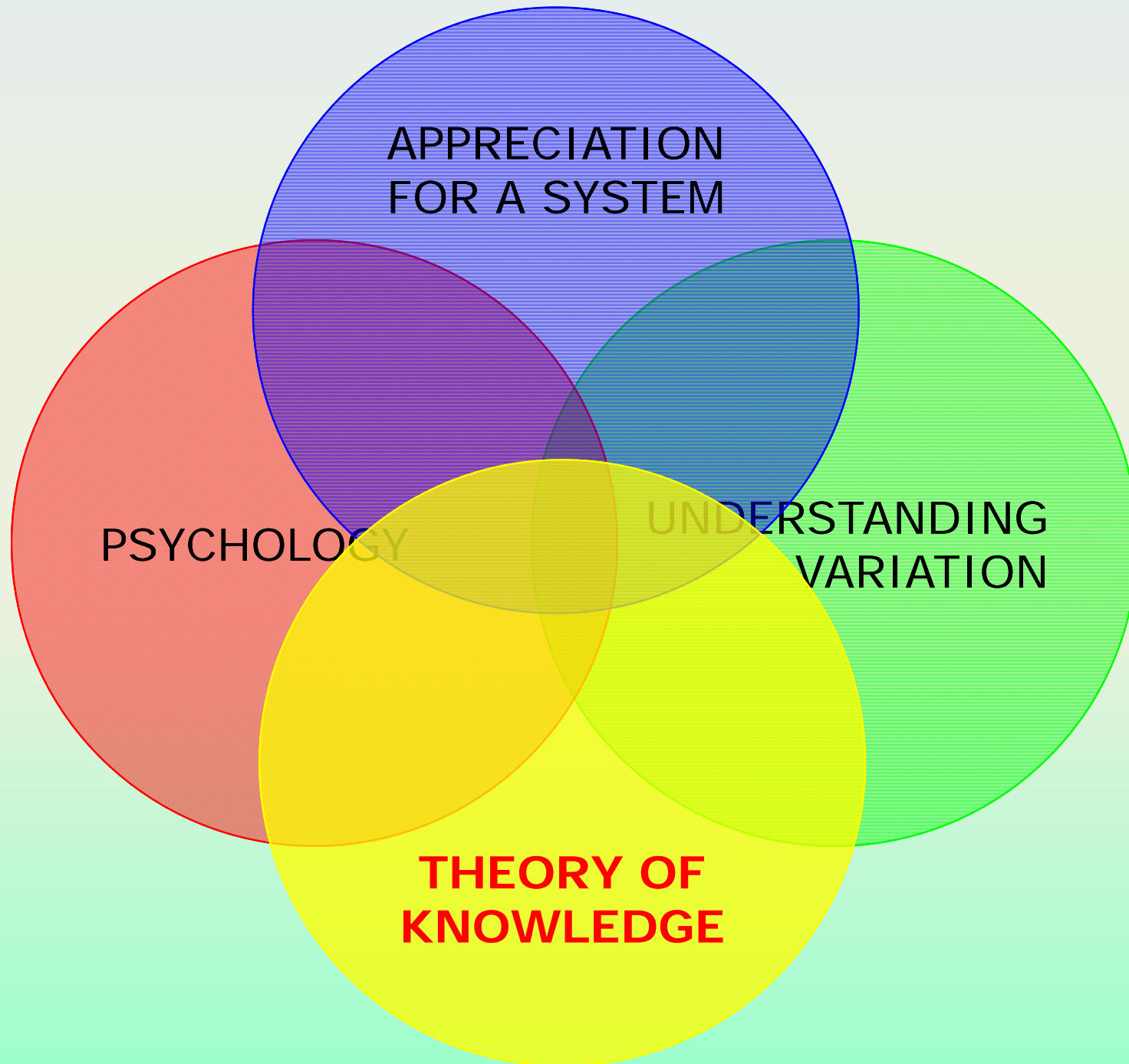
Number of items requiring re-work, corrections

Amount of work in each unit

Percent of work that is error-free



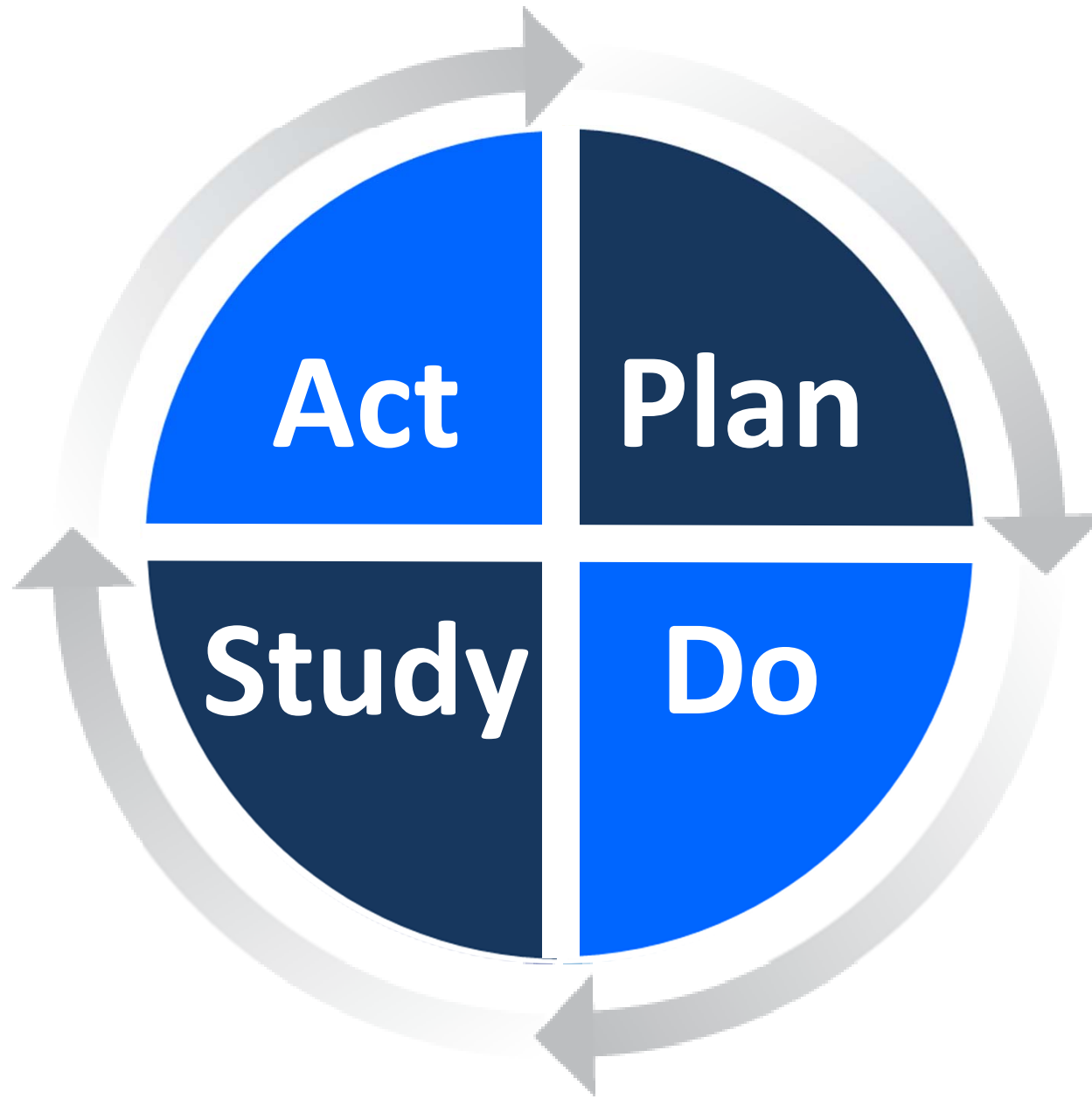
Deming's System of Profound Knowledge



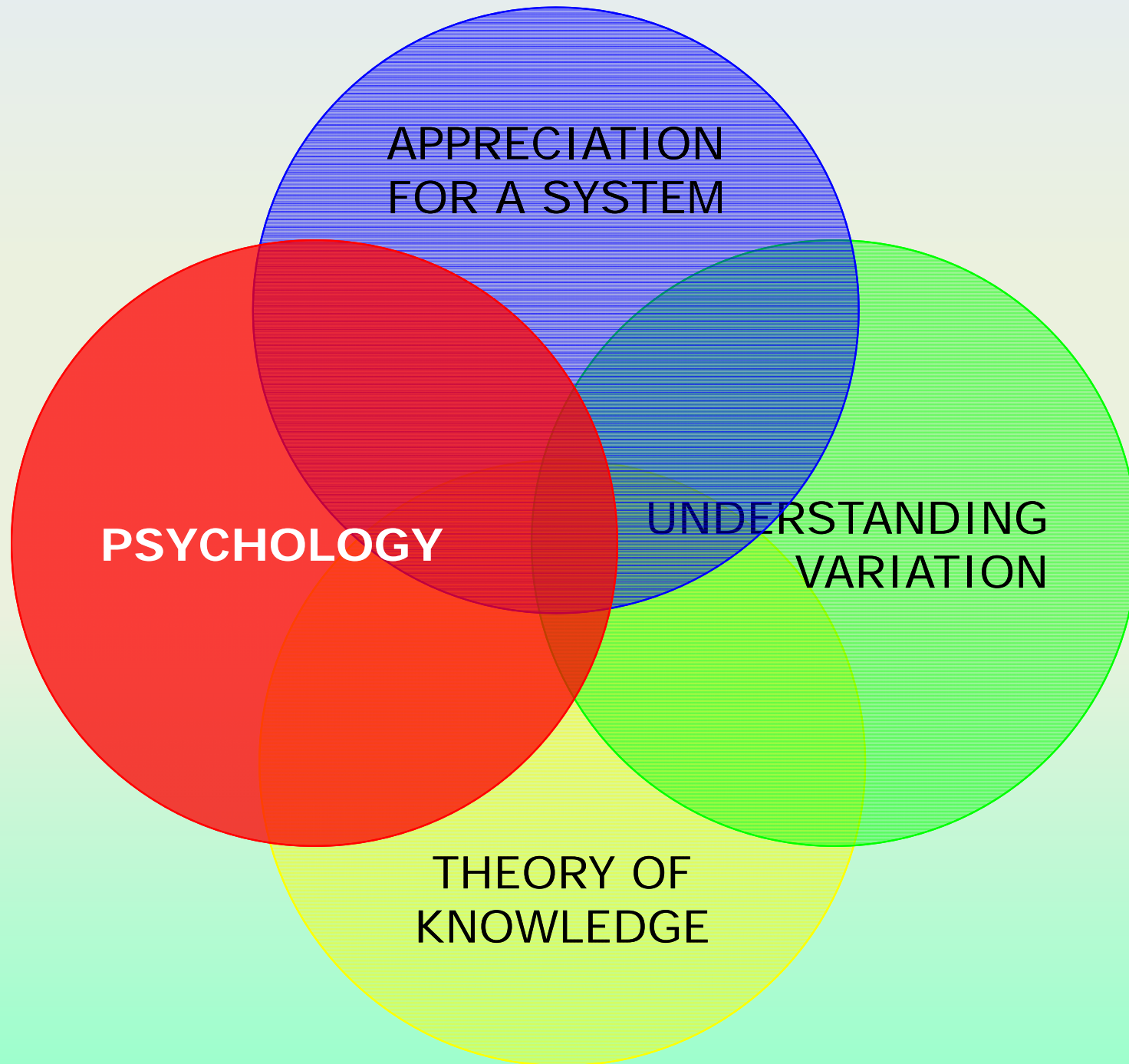


A photograph of three ground squirrels standing upright in a field of dry, golden-brown grass. The squirrel on the left is the tallest, standing on its hind legs with its front paws held together. The squirrel in the middle is also standing upright, with its right front paw raised towards the squirrel on the right. The squirrel on the right is the shortest and is sitting on the ground. All three squirrels have light brown and grey fur with a darker brown patch on their heads.

**Enlargement of a
committee does not
necessarily improve
results**



Deming's System of Profound Knowledge





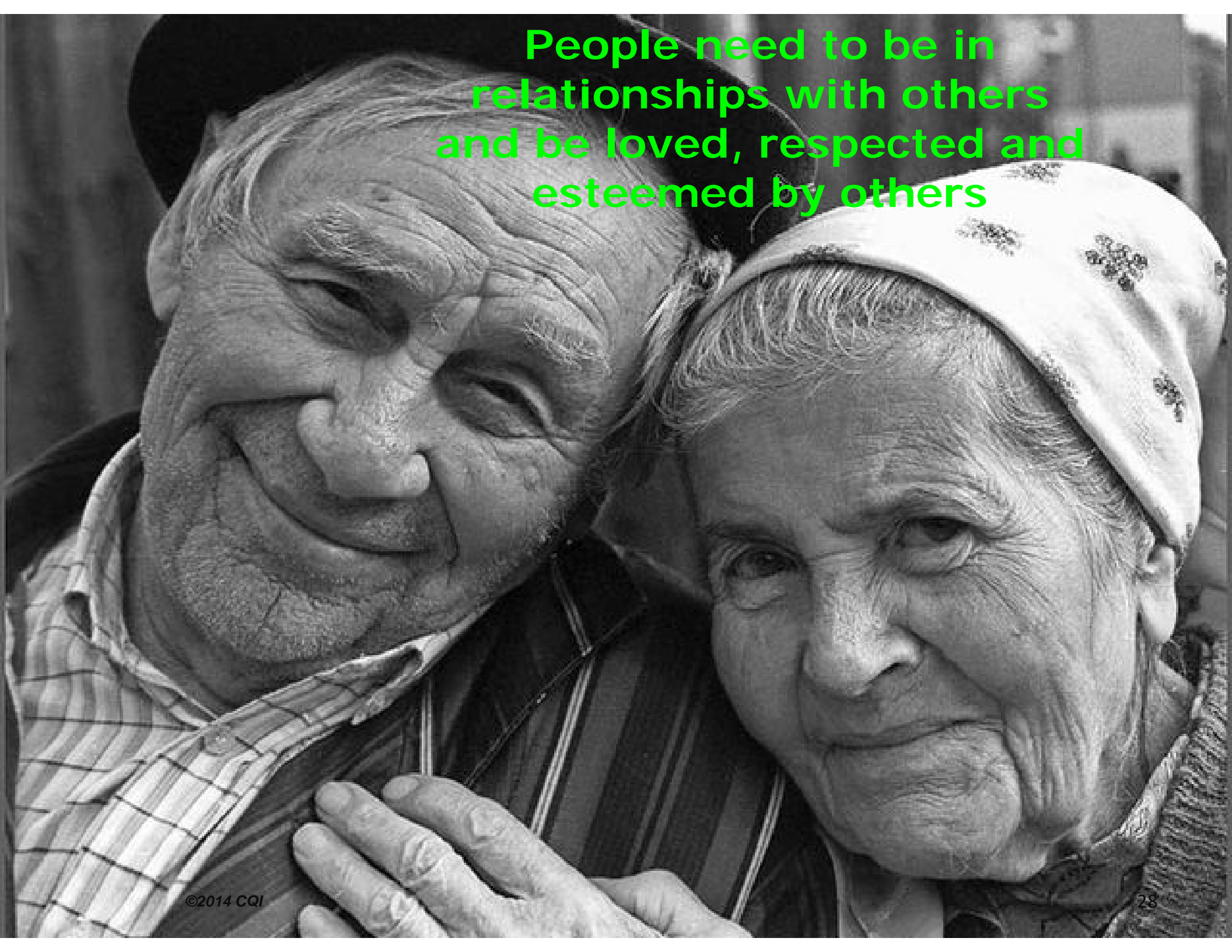


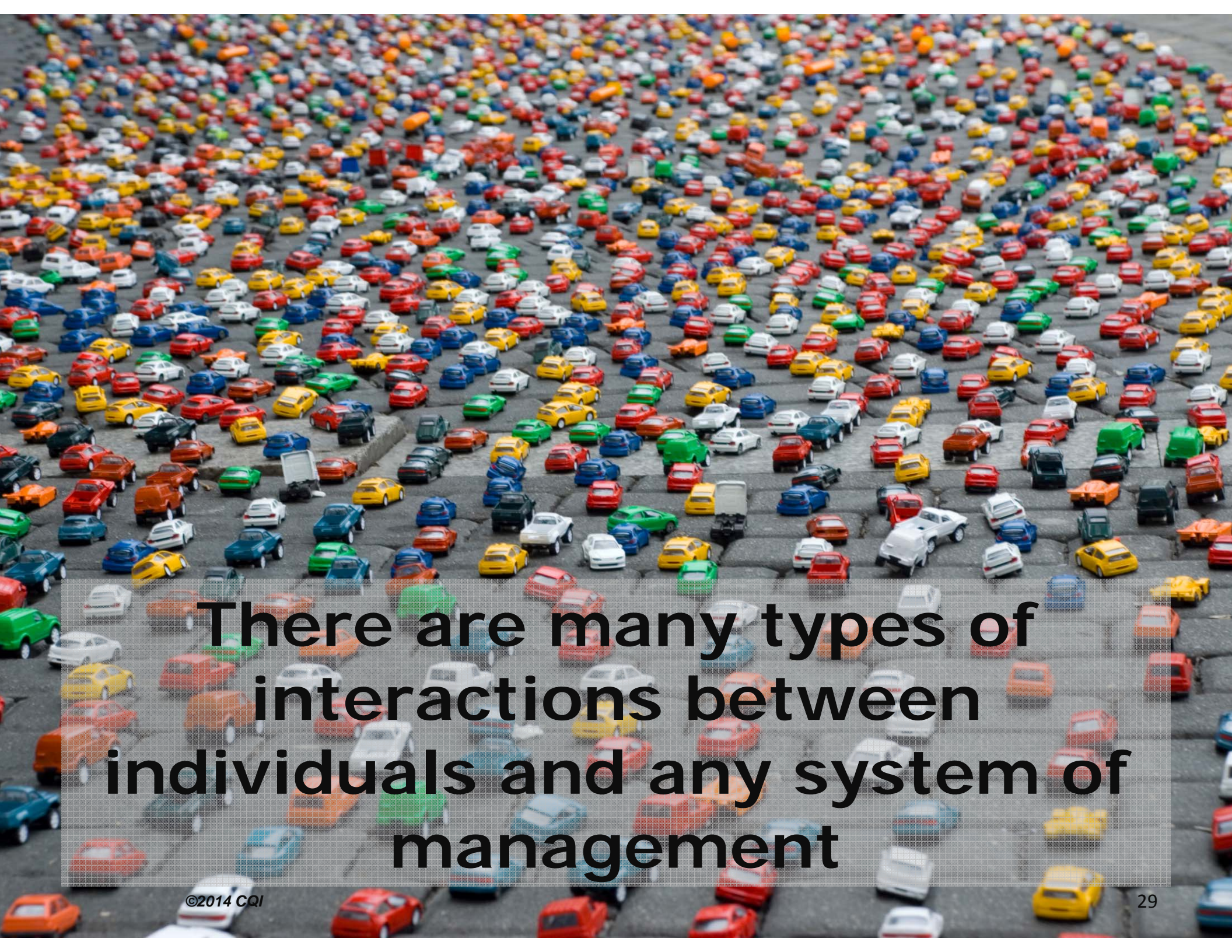
People are different in every way and should not be treated as if they are identical

People are born with a natural inclination to learn and experience joy in work



People need to be in relationships with others and be loved, respected and esteemed by others





There are many types of interactions between individuals and any system of management

A Lens Through Which to See With An Outside View— The System of Profound Knowledge

Components of The Whole

- **Appreciation for a System**

A system is a network of interdependent components that work together to accomplish the aim of the system

- **Understanding Variation**

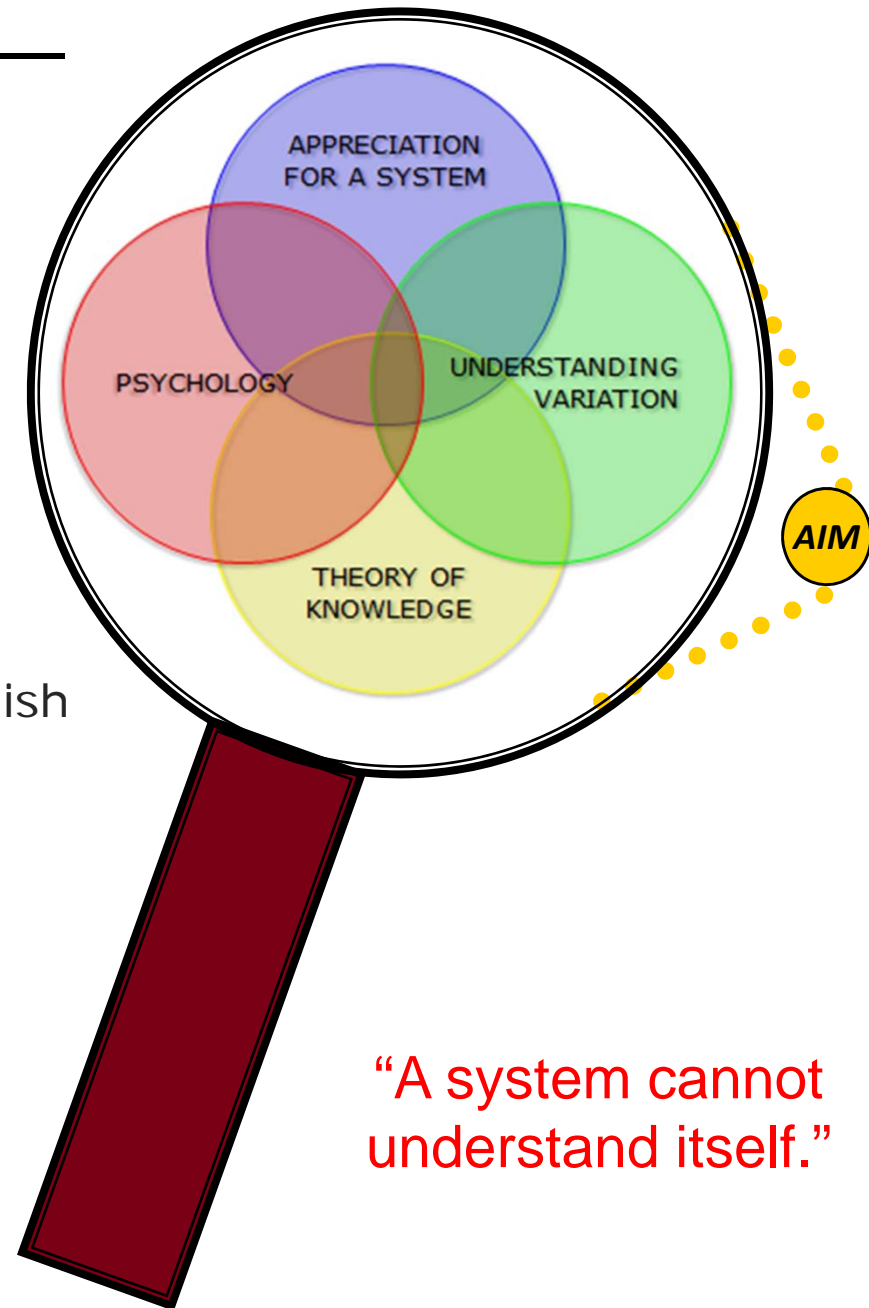
There will always be variation.....

- **Theory of Knowledge**

Knowledge is built on theory

- **Psychology**

Individuals, Groups, Society, Change



“A system cannot understand itself.”

The Red Bead Experiment



The Red Beads

10 Vacancies

(educational requirements minimal)

1 Recorder

- Able to record figures in a spreadsheet. Must be sharp.

1 Chief Inspector

- Able to compare figures and speak in a loud, clear voice

2 Junior Inspectors

- Able to count (perhaps up to 20) and write clearly

6 Willing Workers

- No education needed; training will be provided. Willing and able to obey orders without question or argument.



What did we learn here? [Red Beads]

1. What was the source of low performance by the workers?

1. The cause of the low yield was red beads in the incoming material. Get the red beads out of the system.

2. What influence are the willing workers able to exert to improve quality?

2. The willing workers are totally helpless to improve quality. They will continue to make red beads so long as there are red beads in the raw material. The experiment is stupidly simple, but it makes the point. Once people have seen it, they find red beads (sources of trouble) all over their organizations.



What did we learn here? [Red Beads]

3. What is the source of the variation between lots and between workers?

4. What can be said about predicting future performance based upon past performance?

3. The variation between lots and between workers arose from the system itself, not from the workers.

4. The performance of anybody on any one day is useless as a basis for prediction of his performance on any other day.



Deming on Ranking

A psychologist that possesses even a crude understanding of variation as will be learned in the experiment with the Red Beads (Ch. 7) could no longer participate in refinement of a plan for ranking people.



Review

With a partner:

Discuss the top lessons you are taking away from the Red Bead Experiment.

Share where you have witnessed Red Beads in your work? How are Red Beads addressed, discussed, improved?



Why?

Our aim is to teach participants the fundamentals of quality systems, including quality management, continuous improvement, innovation and leadership exemplified in the System of Profound Knowledge®.

We help participants apply these principles, practices and tools to make a significant, positive difference in their professional lives and their organizations.



Who is it for?

For any person or organization that desires to be a leader in quality and innovation.



day 1 Introduction to the System of Profound Knowledge® and Theory of Knowledge



day 2 Voice of the Customer



day 3 Appreciation for a System



day 4 Understanding Variation, Measurement



day 5 Psychology



day 6 Transformation and Capstone Project Presentation



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