

Lessons we seem to have forgotten

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Objective

- The paper aims to demonstrate that there are core safety lessons have learnt in the past which are either not practiced present day or are only practiced because “it is the way we do things”. – Paradigm.
- The examples used in the presentation hold a common theme around the hazard of Coal Dust. The truth is that the most grave and disastrous events in coal mining are associated with coal dust.
- Not every incident in mining will result in an inquiry. However, the events discussed here are significant historically and clearly demonstrate the need to **remember and understand!**
- The lessons are as applicable to all hazards in mining and in all types of mining, as they are to coal dust.
- This paper is based on the thoughts of the author and is attempting to encourage a conversation supporting the examination of past incidents and understanding why we do the things we do.



History of Mining Safety and Health Law

- Legislation originated around the mining of gold and silver in UK.
- The Huskar disaster (inrush) came to the attention of [Queen Victoria](#) who ordered an inquiry.
- First English safety legislation was introduced in 1842 to protect the women and children working in mines.
- English mining legislation was adopted by NSW in the early 1800's.
- The first Australian mining laws were enacted in 1851.
- When gold mining began in Gympie in 1867, Queensland adopted the 1851 Australian legislation.
- Specific mine safety legislation was introduced in Queensland 1898.
- A Separate Coal Mining Act was introduced in 1925.



**Torbanlea -21st March
1900– 5 dead.**

Gas ignition

1900.
QUEENSLAND.
ROYAL COMMISSION ON ACCIDENTS IN COAL MINES.

REPORT
OF
THE ROYAL COMMISSION

APPOINTED TO
Inquire into and Report upon the Nature and Cause of a
Disastrous Accident which Occurred at the Torbanlea
Colliery on the 21st March, 1900, and also Concerning
the Occurrence of Inflammable Gas in the Mines
Situated on the Burrum and Ipswich Coal Fields;

TOGETHER WITH THE
MINUTES OF PROCEEDINGS, MINUTES OF EVIDENCE TAKEN
BEFORE THE COMMISSION, AND APPENDICES.

COMMISSIONERS:--
WILLIAM HENRY RANDS, ESQUIRE, CHAIRMAN.
W. FRYAR, ESQUIRE | T. GLASSEY, ESQUIRE, M.L.A.
W. RANKIN, ESQUIRE | J. THOMAS, ESQUIRE.



Lessons from Torbanlea

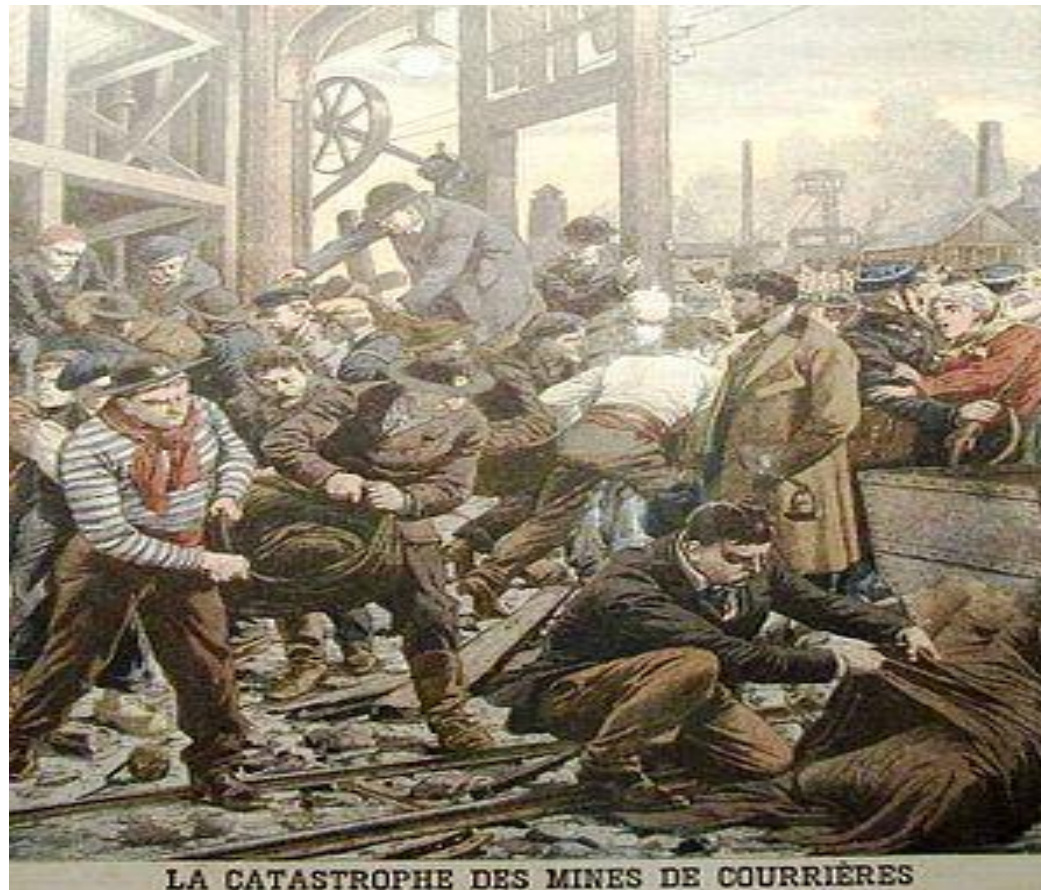
- Torbanlea disaster occurred in 1900 – recommended separate legislation for coal.
- no person shall be eligible to act as Manager of a Coal Mine in which more than ten persons are employed underground, unless he possess a First -Class Certificate of Competency.

Context of Lessons from Torbanlea

- Coal mining is different – especially underground.
- First class manager – for underground coal – management structure.



Courriers – France 1906-1099 dead



Lessons from Courriers

- thirteen men **(13)** effectively rescued themselves – 3 weeks in the darkness.
- internationally recognised that coal dust in mines, even without the presence of inflammable and explosive gases, could produce dangerous conditions.

Context of Lessons

- The debate around coal dusts ability to explode helps us to understand the reasons why the industry sought a dust suppression medium – stonedust.
- Does the Courriers experience suggest we should have refuge bays underground? Should we be focusing more on how we determine the atmosphere underground following an explosion so that we can enter to rescue, with confidence?.....Pike River.



Mt Mulligan – 19th September 1921 – 75 dead. Gas ignited by Shotfiring

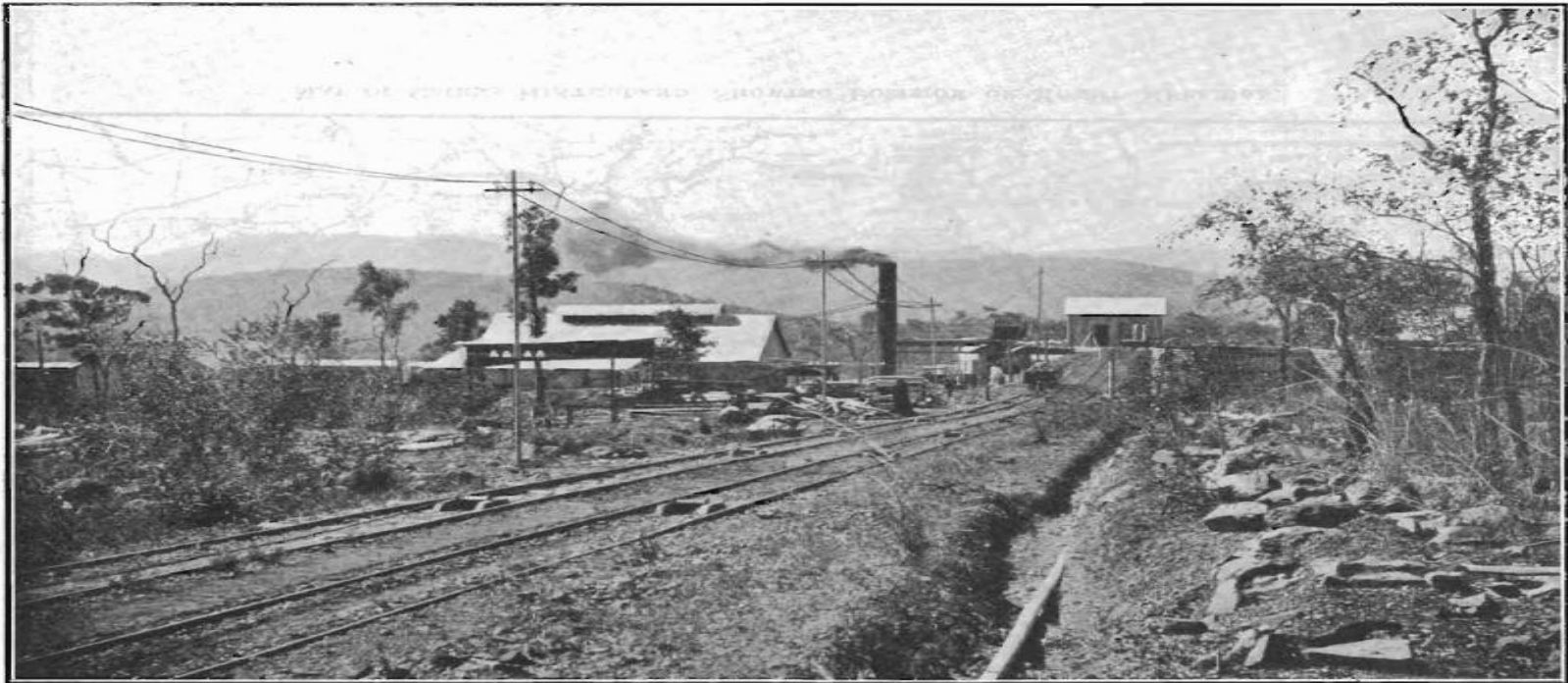


Exhibit 13.

MOUNT MULLIGAN COLLIERY, NORTH QUEENSLAND.

SHOWING INCLINED TRAMWAY, POWER HOUSE, AND WEIGHHOUSE.

[Photo., A. Tilse.

Looking from the Main (No. 1) Adit, or entrance to the Mine, and down the Inclined Tramway over the Power House and Weighhouse, which are on the Mount Mulligan Branch Railway. This plant is three furlongs, or over a quarter of a mile, distant from the mouth of the Main Tunnel, and the Mount Mulligan Township, which lies behind and to the right of the buildings shown, is nearly half a mile from this entrance.

A Past forgotten is a Future repeated



ENTRANCE TO THE MINE.



THE CABLE DRUMS, BLOWN 50 FT. FROM THEIR FOUNDATIONS.



WRECK OF THE EXHAUST FAN, AT OUTLET OF THE FAN TUNNEL.



SMITHY AND ELECTRIC SWITCHBOARD, 100 FT. FROM THE ENTRANCE.
MOUNT MULLIGAN COLLIERY AFTER THE EXPLOSION.

[Photos. A. I. Taylor.]

Exhibit 16.



Lessons from Mt Mulligan

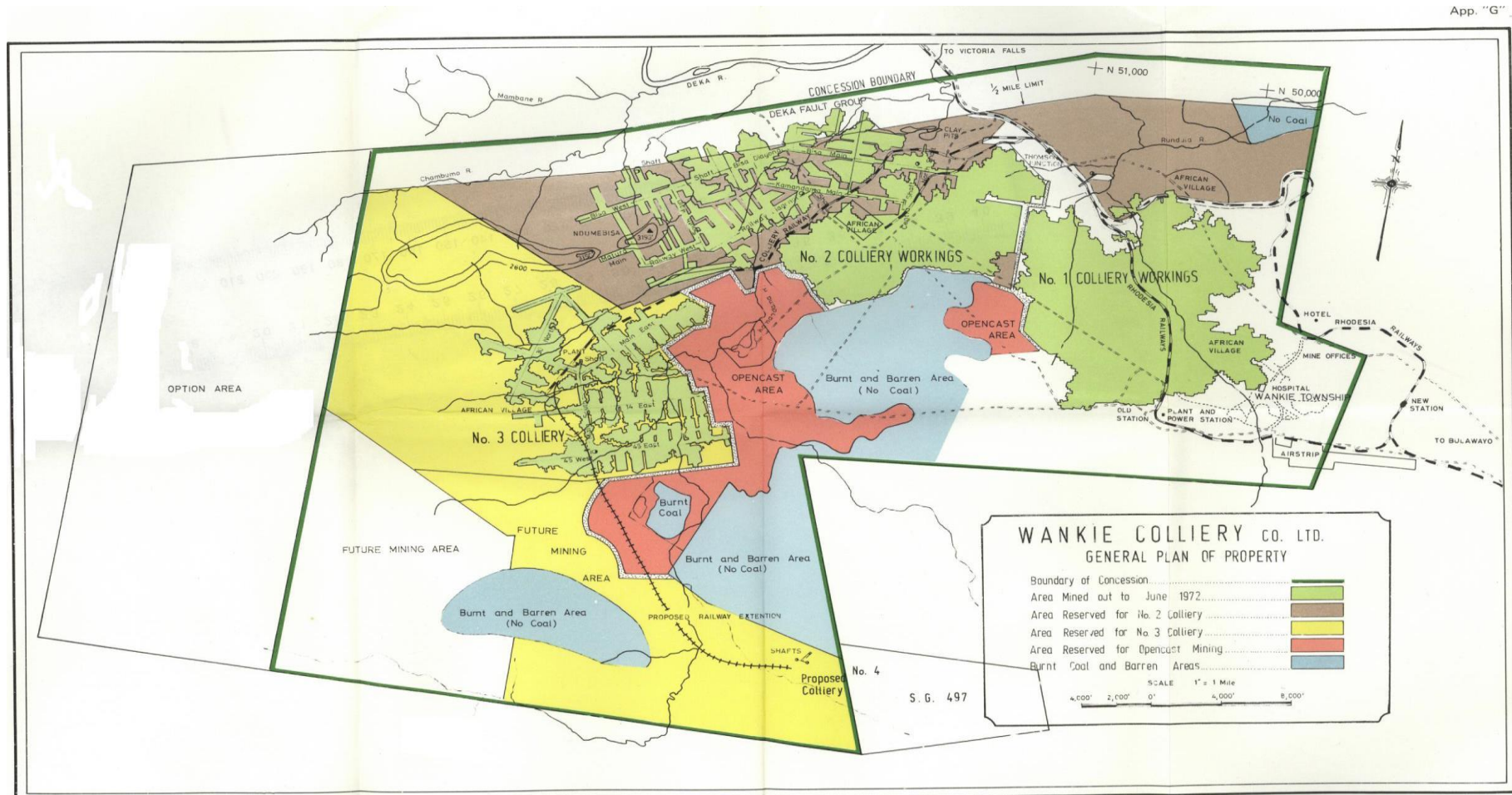
- That the Department of Mines seek co-operation with other States for the establishment of an experimental station in Australia for the purpose of carrying out research work in matters relating to explosions in mines, their prevention, and the limiting of their effects.
- Where *permitted* explosives are required to be used, every shot hole shall be charged and stemmed by or under the supervision of a district shotfirer.

Context of Lessons from Mt Mulligan

- First evolutionary step of SIMTARS. The seed of a concept.
- Shotfiring to be carried out under the supervision of a district shotfirer. Recognition that a command and control structure required for principle hazards.....suggestion of management structure.
- Permitted explosives existence in 1921.....needed in presence of gas.



Wankie – Zimbabwe – 6th June 1972 – 425 dead - Shotfiring ignited gas.



Lessons from Wankie

- 29th of December, 1960 - ignition of methane
- 21st of October, 1970, - a blown-out shot in the presence of fire-damp led to the ignition
- A full time, properly qualified ventilation officer reporting directly to the General Manager of the Mine
- siting of a mine fan in relation to the shaft it serves, such that the fan is not damaged in the event of an explosion.

HEADING or TITLE here...

- 1972 – identification of the need for a VO – outside of Australia – suggestion of a management structure.
- Design and positioning of ventilation fans very topical.....especially since Pike River.



Box Flat – 29th July – 1972 – 17 dead Spontaneous Combustion



Lessons from Box Flat

- That, in conjunction with the New South Wales coal mining industry, a Safety in Mines Organisation be established.
- That any person who is appointed to make technical decisions that affect the Manager's authority regarding the safety of the mine must be qualified as a Manager under the Act and shall be responsible under the Act.
- That provision be made for the rapid sealing of districts and mines.
- That unventilated dead-ends be avoided wherever practicable.
-to the presence of re-circulation is of considerable importance.

Context of Lessons from Box Flat

- Another evolutionary step for SIMTARS.....interestingly, still no action.
- Identified need to have a competent qualified manager for underground coal....management structure.
- Good ventilation control is critical for pre and post spon comb management.



Conclusion

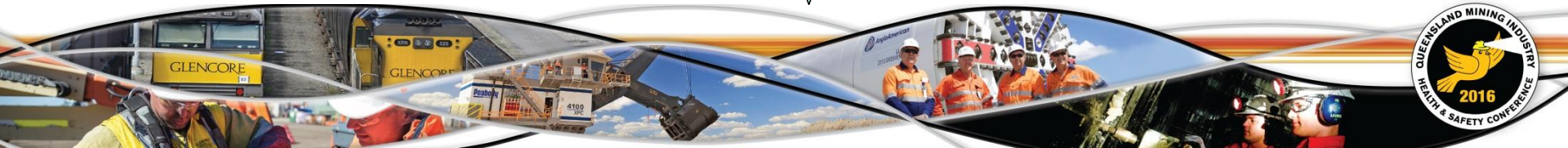
- Coal mining is different.....the environment is dynamic and the consequences of incidents can be disastrous!
- Coal dust blows up.....the risk must be managed and controlled
- Competent people in a management structure is necessary.
 - Mine manager
 - Ventilation Officer
- SIMTARS is necessary and has a clear core mandate fro industry.

REMEMBER

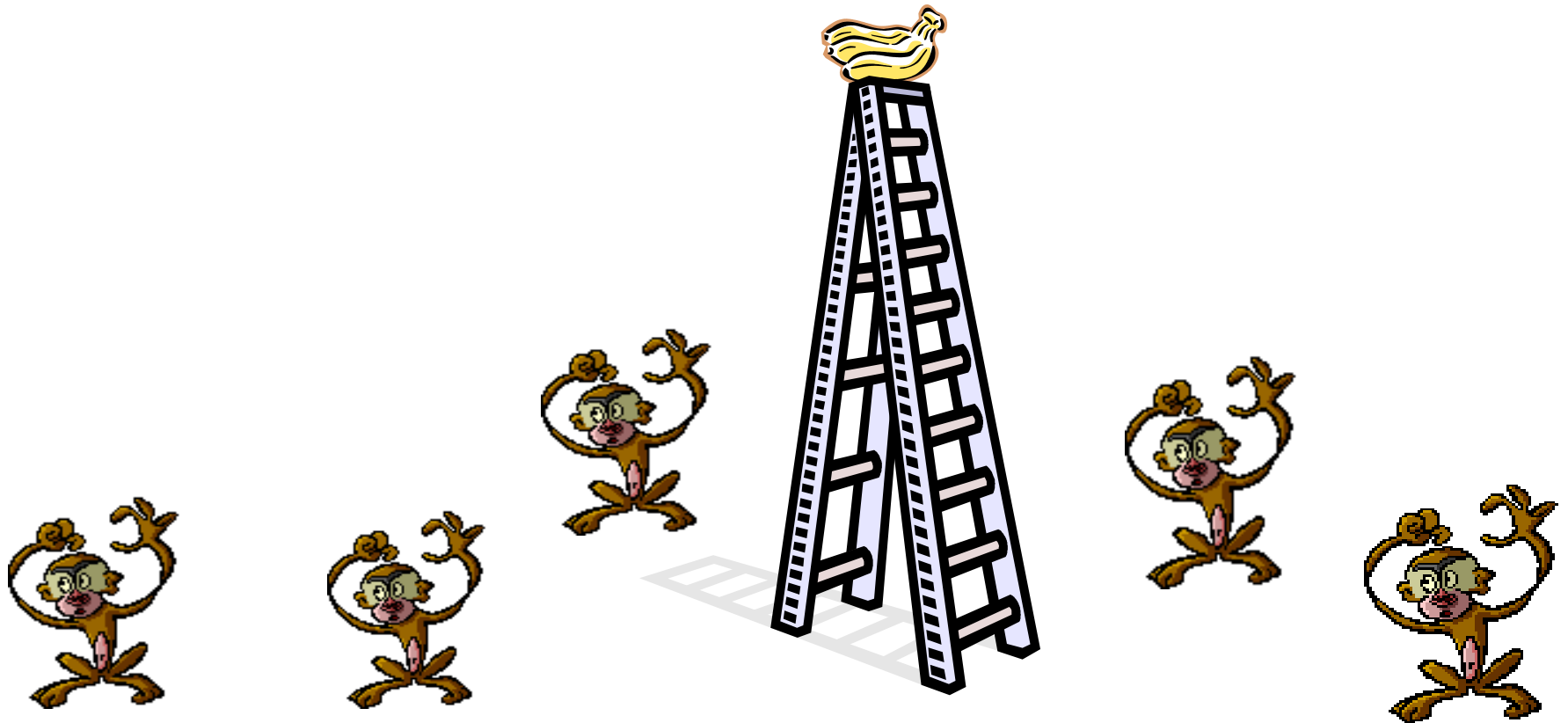
UNDERSTAND



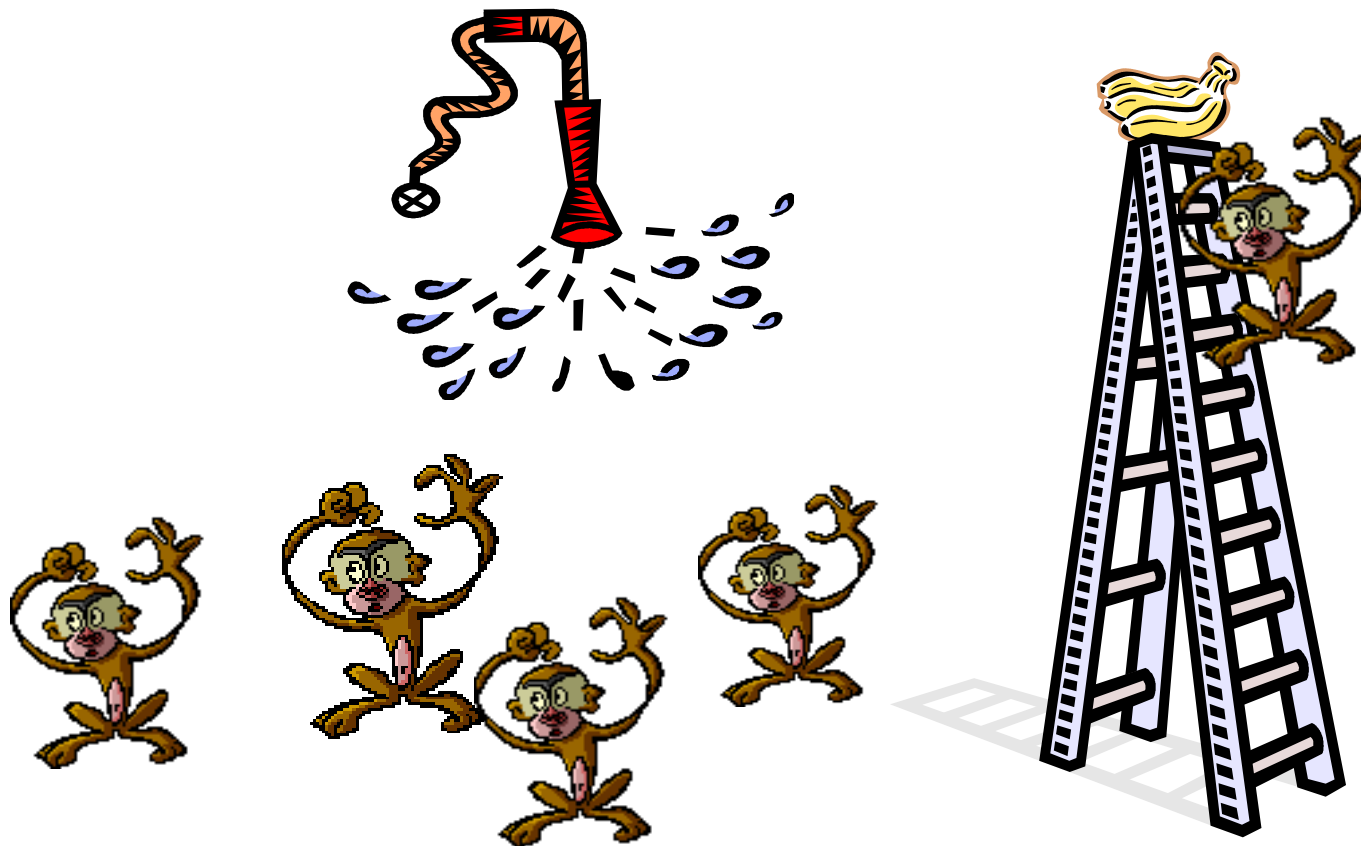
How is a paradigm formed?



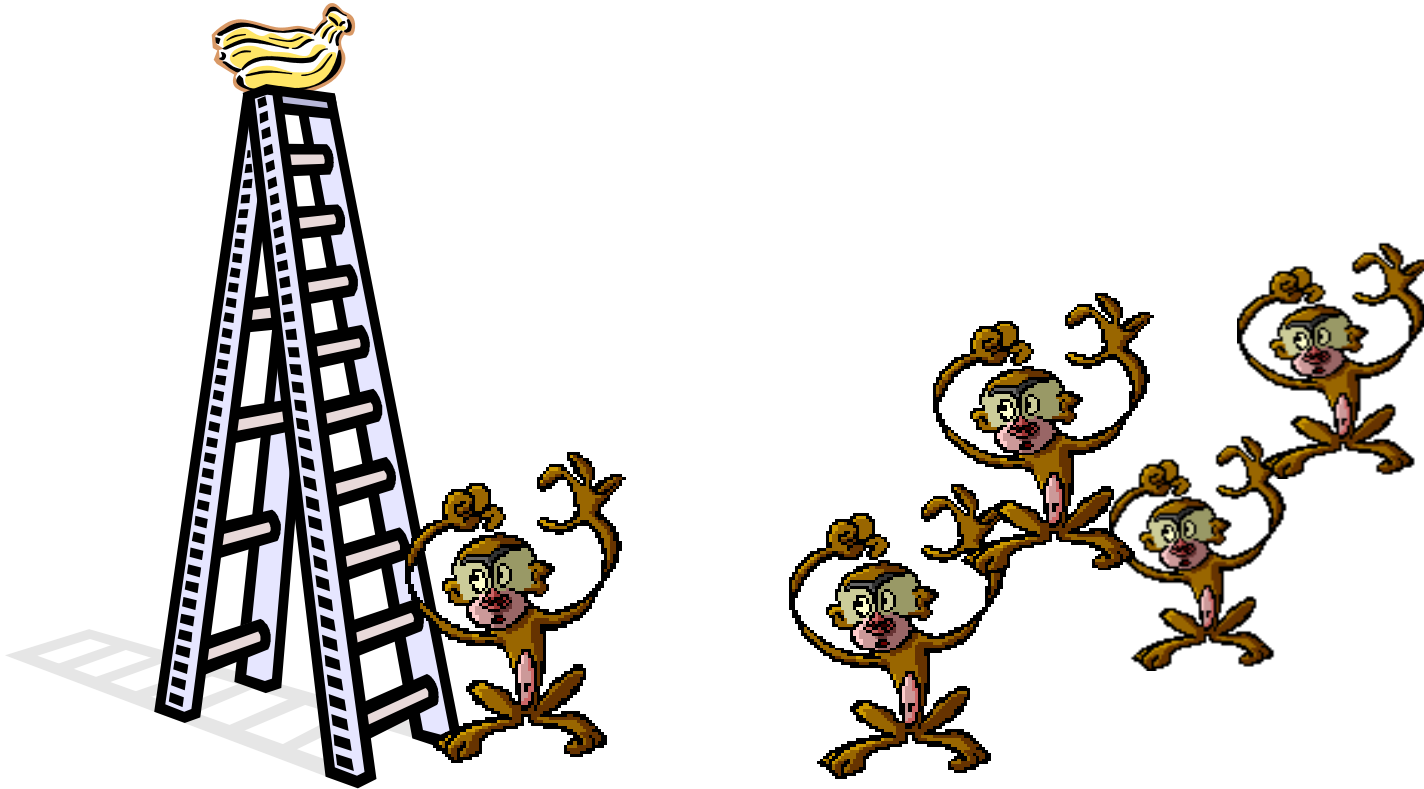
A group of scientists placed 5 monkeys in a cage and in the middle, a ladder with bananas on the top.



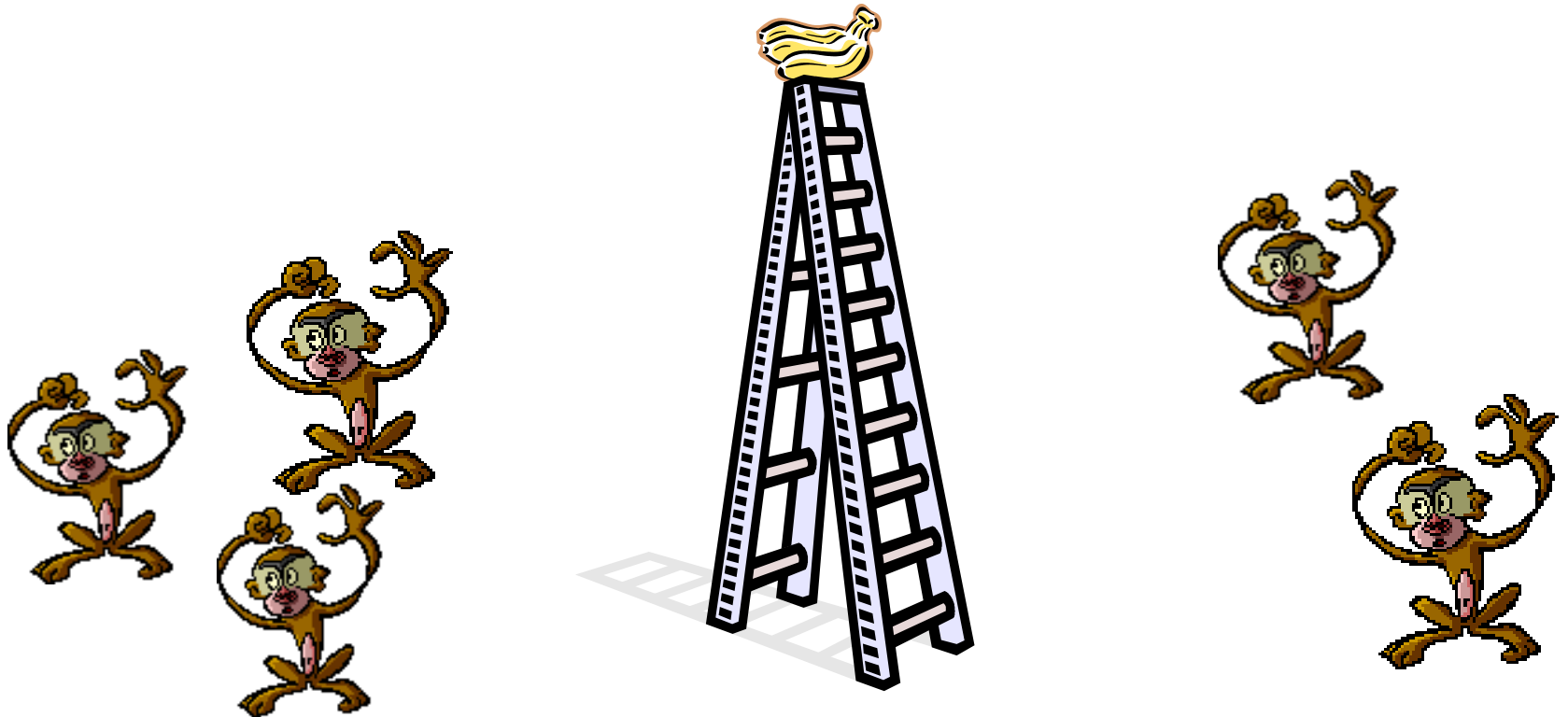
Every time a monkey went up the ladder,
the scientists soaked the rest of the
monkeys with cold water.



After a while, every time a monkey went up the ladder, the others beat it up.



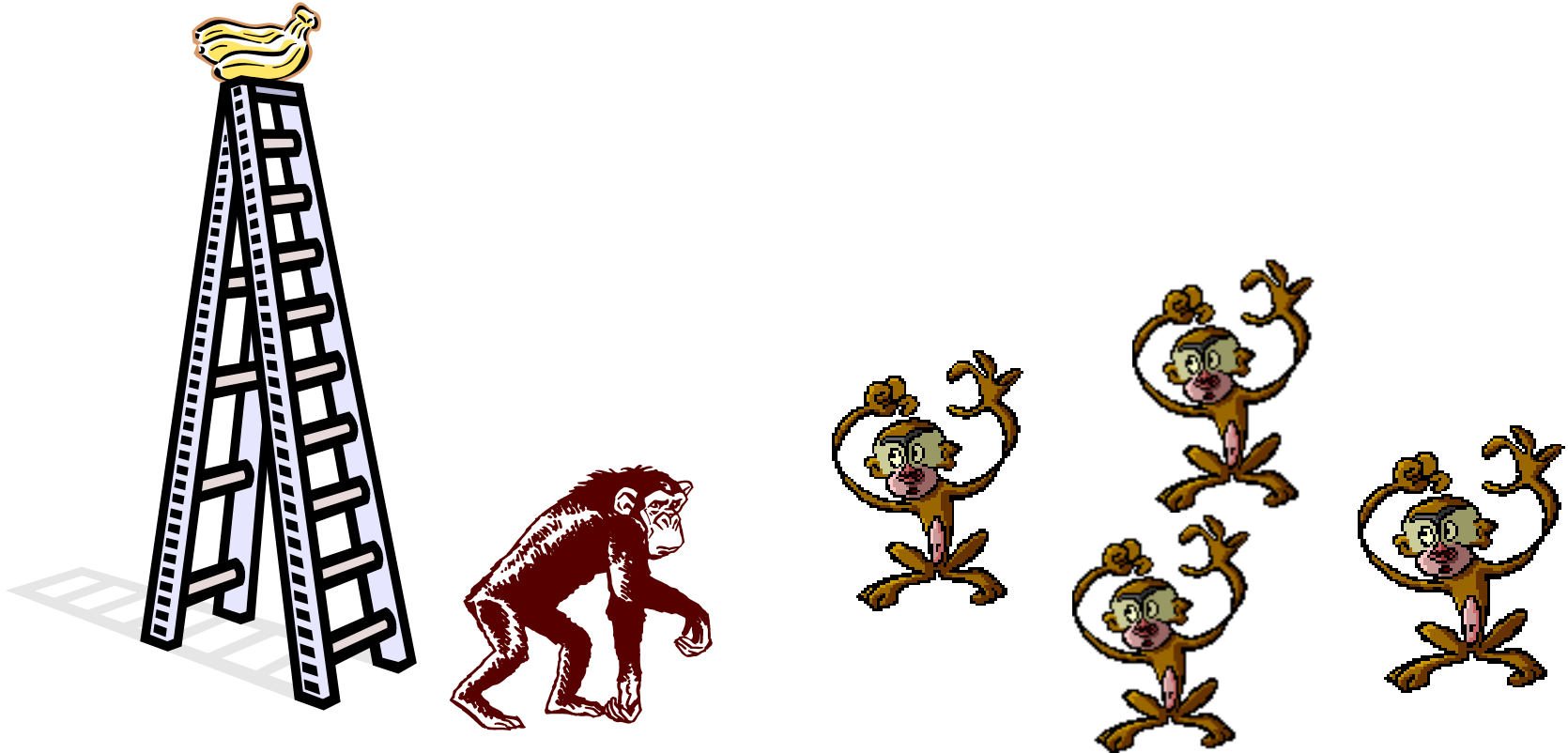
After some time, no monkey dared to
go up
the ladder regardless of the
temptation.



Scientists then decided to substitute one of the monkeys. The 1st thing this new monkey did was to go up the ladder. Immediately the other monkeys beat him up.

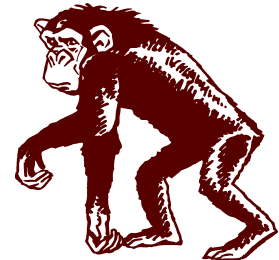
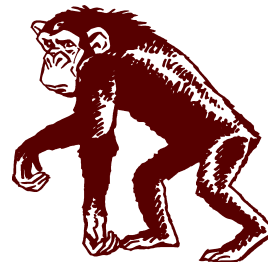
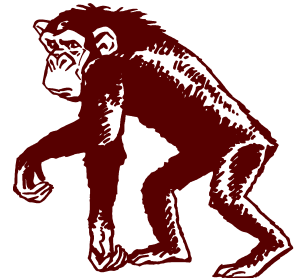
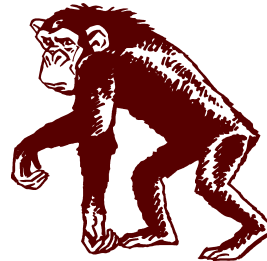
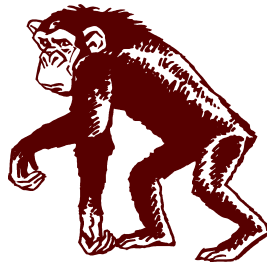
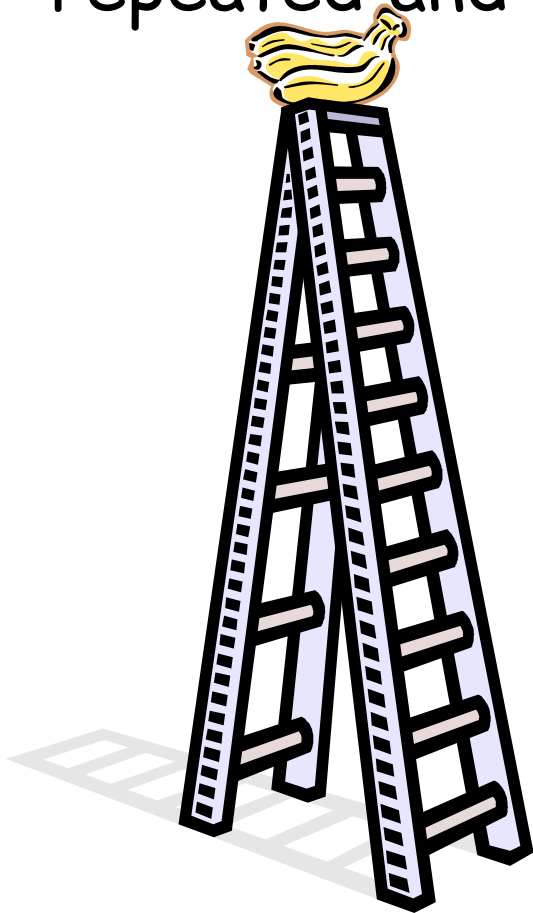


After several beatings, the new member learned not to climb the ladder even though it didn't know why.

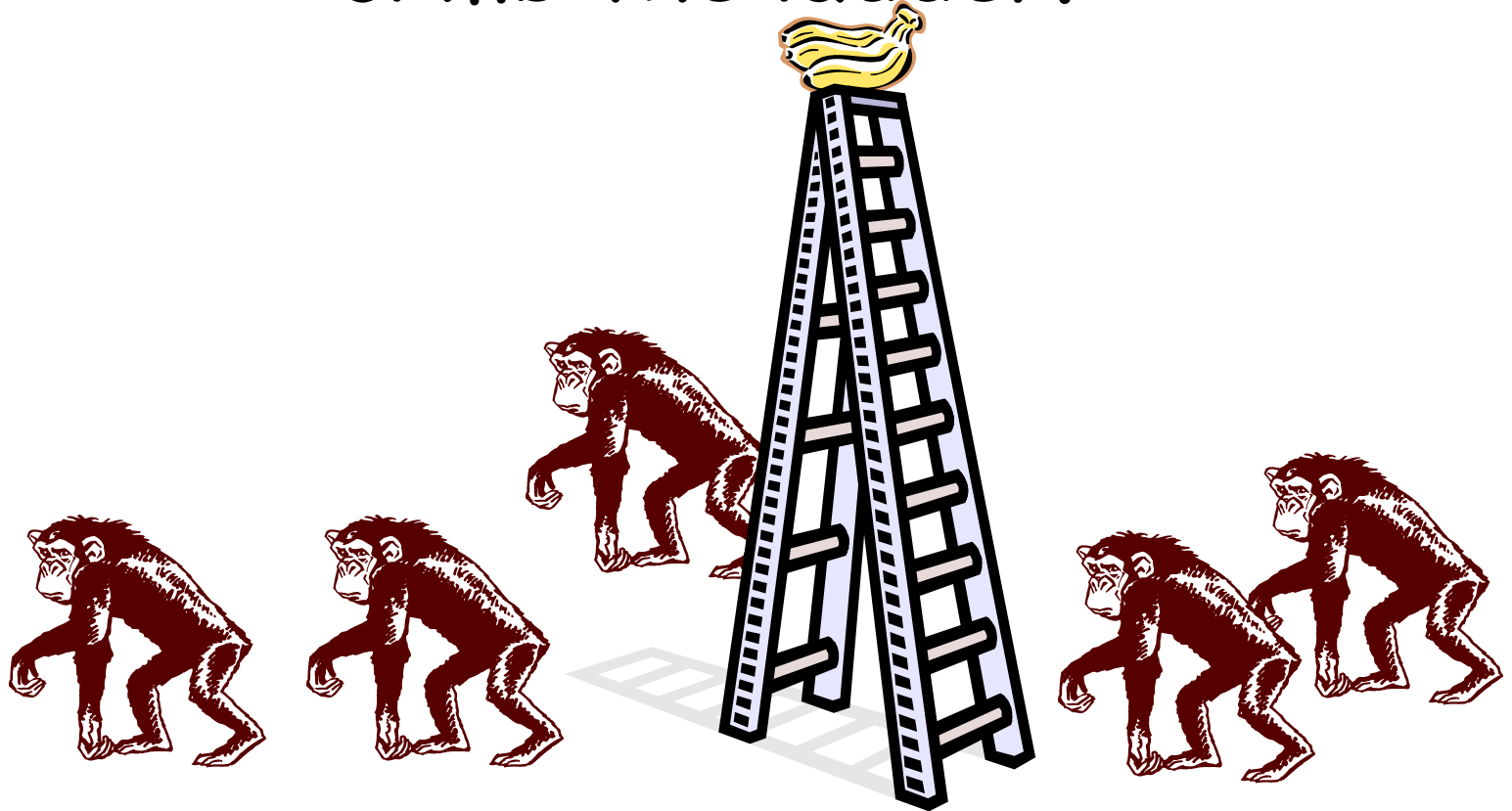


A 2nd monkey was substituted and the same occurred. The 1st monkey participated in the beating for the 2nd monkey. A 3rd monkey was changed and the same was repeated (beating).

The 4th was substituted and the beating was repeated and finally the 5th monkey was replaced.



What was left was a group of 5 monkeys that even though never received a cold shower, continued to beat up any monkey who attempted to climb the ladder.



If it was possible to ask the monkeys why
they would beat up all those who attempted
to go up the ladder.....

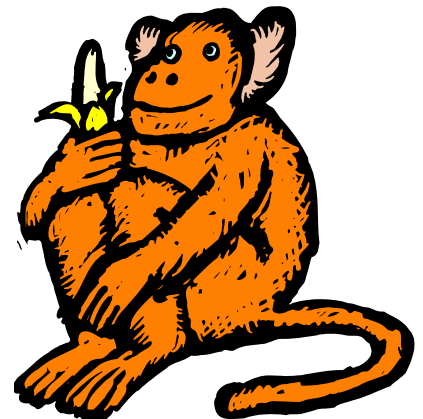
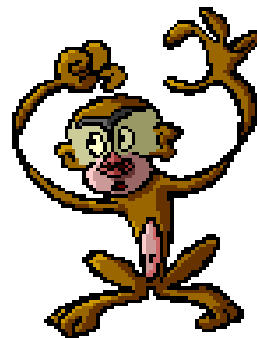
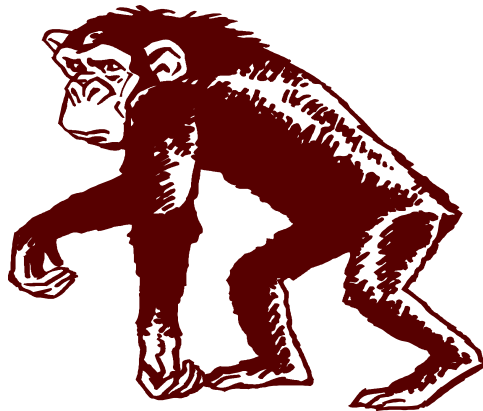
I bet you the answer would be....

**"I don't know - that's how things are done
around here"**

Does it sound familiar?



Don't miss the opportunity to share this with others as they might be asking themselves why we continue to do what we are doing if there is a different way out there.



**"Only two things are
infinite: The universe
and human stupidity.
And I am not so sure
about the former."**

Albert Einstein

