Systems and Turing Machine

Throughout the paper we assume that there is a watcher that constructs something out of objects and acts in step by step (example, like in computer game).

Definition.
World is what watcher constructs.
Definition.
Object is a visible part of world.
Definition.
Act is a rearrange (change) of objects.
Definition.
Step is a visible division between acts.
Definition.
Ant is some object that makes some acts.
Definition.
Rule is some rule using which ant acts (example, green light means "move", red light- "danger").
Definition.
Unit is some object that is not ant.
Axiom.
Ant always posses some unit.
Definition.
Bank is a collection of units.
Definition.
Pillow is a collection of units that are not in bank at any step.
Definition.
Fraudulent ant is an ant that at some step never brings any unit to bank.
Definition.
Frozen ant is an ant that does not act anymore at some step.
Definition.
Terminator is an ant that finds at some step that there exist pillows and fraudulent, frozen ants.
Definition.
System is a set of ants equipped with rules.

Let us consider System that has enough rules so that Gödel theorem is true.
Ants can see and repeat other ants acts.
The system has one bank.
One main rule of the system is "all units must be brought to bank".
Ants know that this rule is crucial for their existence.
Ants are capable to change any rule.
Ants can teach each other about rules.
The goal is to fulfill the rule in the number of steps not exceeding the maximum number of steps

after which the collapse of the system happens.

Ants know about the goal.

The watcher helps ants to act in the most efficient way only and only if no fraudulent or frozen ant exists and there is no pillow.

Theorem F.

There exists frozen, fraudulent ant and there exists pillow at some step.

Proof.

Gödel theorem is true in the system, hence there exists a sentence that can not be proved or disproved using the system rules. This sentence can be interpreted as a sequence of acts for some ant or ants. Hence at some step some ant encounters such sentence ending act. Hence the ant becomes frozen since it can not act anymore. Hence the unit that belongs to such ant becomes pillow. Therefore such ant becomes fraudulent.

QED

Theorem.

The system at some step is abandoned by watcher.

Proof.

From previous theorem it follows that at some step there exists fraudulent, frozen ant. Hence the watcher does not help to fulfill the rule, ie the system is abandoned by watcher.

Theorem T.

There exists terminator at some step.

Proof.

Since Gödel theorem is true in the system, there is some ant that knows about this theorem and hence understands that there exist fraudulent, frozen ants and there are pillows because of that.

QED

Theorem.

All ants become fraudulent and frozen at some step or the system collapse at some step.

Proof.

By Theorem F there exists fraudulent, frozen ant at some step. Let us assume that at any step there is some ant that is neither fraudulent nor frozen. It would mean that the system runs (the goal is been fulfilling) for more than maximum number of steps. Since this is impossible by the limitation on the number of steps for system to run, the result follows.

Theorem.

To return help from watcher, the ants must become unfrozen and not fraudulent anymore and remove all pillows.

Proof.

Self-evident.

Theorem.

If ants never change rules so that Gödel theorem is not true in the system, there will be never help from watcher. Therefore at some step the System collapse.

Proof.

When the rules are not changed as it said, all ants remain fraudulent, frozen and there are pillows, ie no help from watcher never. Therefore the system collapse when maximum number of steps is reached.

QED

Examples of systems to which above Theory applies: Karl Marx economical theory, other micro- and macro- economical theories including fraud theory in economics (see [1], [2]), systems of collectors and etc. Units are goods, money, virtual money and etc.

Theorem.

Watcher is an infinite Turing machine, objects and acts are pieces of code written on it.

Proof.

Infinite Monkey (see Infinite Monkey Theorem in Wikipedia) that typed everything exists because now here is typed word "BANANA". Hence Watcher and Infinite Monkey is the same. Obviously all the world and its objects and acts that He constructs are the pieces of code on the Turing machine.

QED

As one can easily see the results of the paper are predicted and discussed in [3].

Literature.

1. Karl Marx. Capital.
2. W. Albrecht,G.Wernz, T. Williams, Fraud. Bringing light to the Dark Side of Business.
3. Dhammapada, 9 – Mischief, p. 33, Shambhala Edition