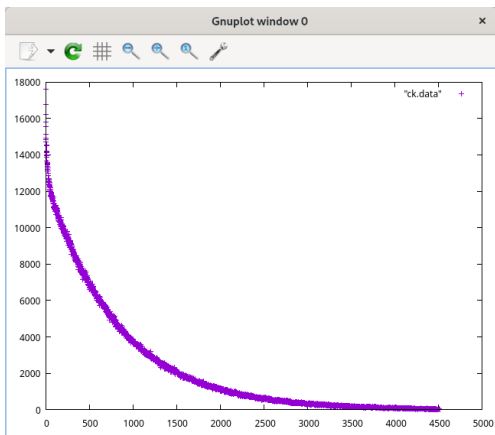# Agent Object and State by Colm Kennedy.[**]

Figure One.

The horizontal X-axis measures time. The vertical Y-axis measures temperature, or the number of rules firing per cycle.

Notes:
The curve may look smooth but contains some residual noise[2].

[aoss'] means agent[1][3] 'a' changed object 'o' from state s to state s' .

It is possible to fit an exponential curve to the data set.

The data is generated by a custom interpreter written in C and running under **GNU/Linux**. The data is then plotted using **GNU/Plot** under the same operating system.

Phase space metrics provide very good measures of progress in Artificial Intelligence **[AI]** projects. Most populations run to date have had ten agents, ten objects and ten states. The bounds in **Fig.1** are time of 4,000 steps[T] and temperature of 12,000[Bβββ]. The *precise* analogues of pressure and volume have yet to be elucidated. The team had yet to fully master formatting and color options in gPlot.

Previous work.
The work reported upon herein, both bears strong resemblances to both Copycat **[Mitchell and Hofstadter][5]** and Boltzmann[Bβββ] simulations[4].

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I wish to thank both MIT and the ATU.

Abstract (and <u>key words</u>)
Abstract: We show how various societies of simple agents can simulated on a serial computer.

The key words are agent, object and state.

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Notes:
A. In Society of Mind we say nemes are data lines and nomes are control lines.[1][3].
B. A *flick-test* involves rapidly interchanging two sets of agents and noting any and all differences.
C. Total number of figures is two.
D. The current most inner loop iterates from **[1 to 100,000]**. No beyond bounds exceptions reported, yet.

Future work: Work is already underway to port the entire system to local lisp architectures.

References: [1869-2023]

[1] Pushpinder Singh, "Failure-directed reformulation!" MIT Meng Thesis, 1998.

[2] Colm Kennedy, "Long range dependence in time series." Ulster University, Msc Thesis, 1998.

[3] Marvin Minsky, "The Society of Mind." 1986.

[4] Ludwig Eduard Boltzmann[Bβββ], Dr. habil., 1869

[5] Hofstadter and Mitchell. Report on progress at FARG (*International edition*), 1995.

Figure Two: '*gubbins*' of the C interpreter.

```c
Include <stdio.h>

Include <stdlib.h>

[…]

for (lp=1;lp<=100000;lp++){
left=hold_slip[buf[lp]].left;
right=hold_slip[buf[lp]].right;
l=0;r=0;b=0;a=hold[left].
a;o=hold[left].o;s1=hold[left].s1;

                    if (obj[o]==s1){

                            l=1;

                    }

                    a=hold[right].a;o=hold[right].o;s1=hold[right].s1;

                    if (obj[o]==s1){

                            r=1;

                    }

                    //collision

                    if ((l+r)<2){

                            if (l>0){

                                    a=hold[left].a;

                                    o=hold[left].o;

                                    obj[o]=hold[left].s2;

                                    buf[lp]=left;

                            count++;

                            }

                            if (r>0){

                                    a=hold[right].a;

                                    o=hold[right].o;

                                    obj[o]=hold[right].s2;

                                    buf[lp]=right;

                                    count++;

                            }

                    }

            }

            return count;

}

[...]

int main(){
        return 0;
}
```

Status: Preprint.