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# LSE Information Systems Research Forum

## 27 February 2012

*"Zest for Enlightenment"*

## Transparency, Measurement & ICT

### Cause of, Or Cure for, The Next Financial Crisis?



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# Giant Yellow Croaker



[Source: <http://news.sohu.com/20070403/n249151441.shtml>]



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# Impertinent Questions





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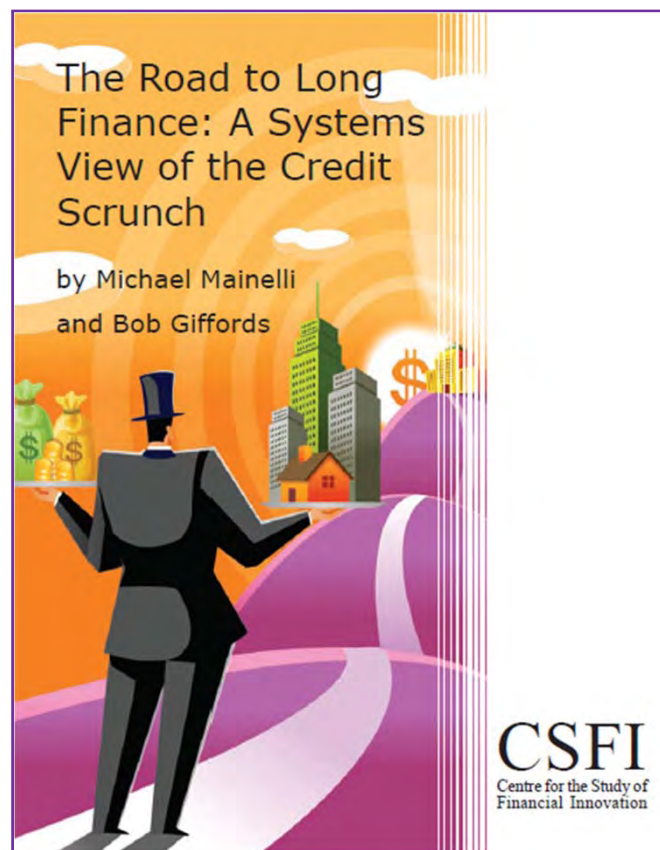
# Long Finance

## When would we know our financial system is working?

When we can recommend a retirement structure to a 20 year old?

When we can fund a forest?

...







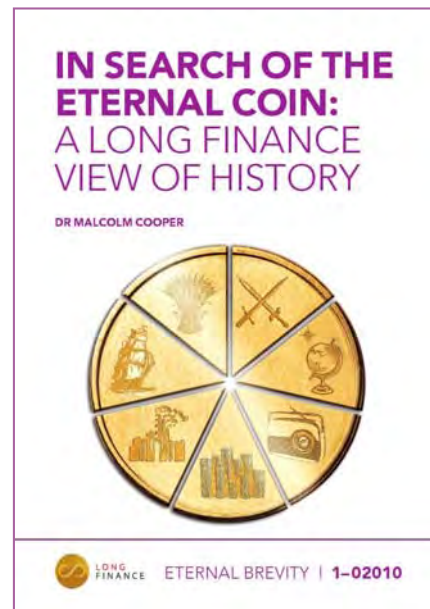
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# Four Programmes

## Finance Shorts



## Eternal Brevities



## Financial Centre Futures



## London Accord

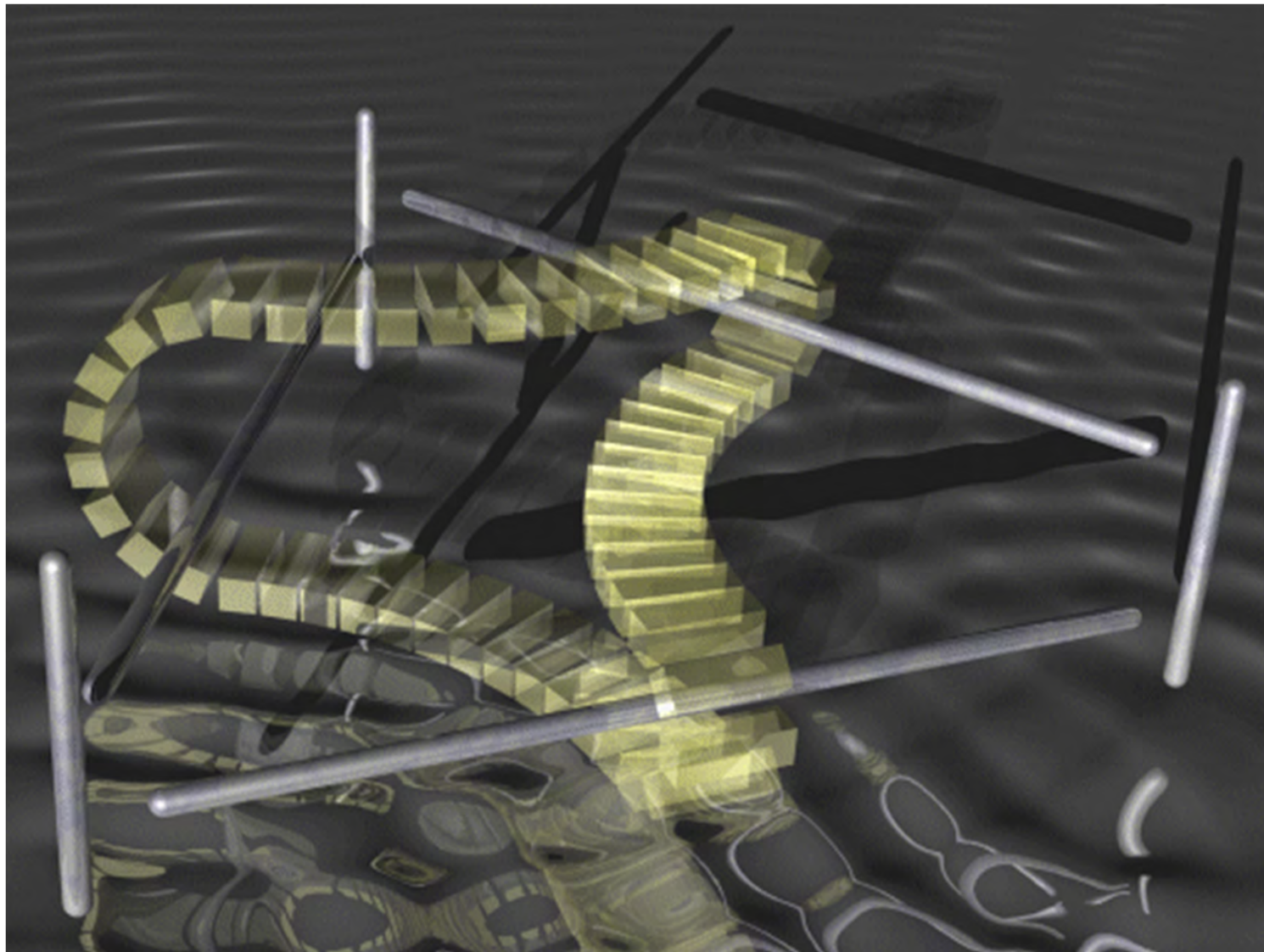




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# The Eternal Coin



[Source: <http://illusionsetc.blogspot.com/2005/08/moving-mobius-strip.html>]



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# Meta-Commerce


Core Theme	Sample Research Questions
1. Long-term versus short-term	What are secrets of success among the finances of the institutions, e.g. the Vatican?
2. Fiscal versus monetary	How might we price counter-cyclicalities?
3. Free versus regulated	What is the value of high velocity trading?
4. Selfish versus selfless	Do codes of ethics make a difference?
5. Public versus private	How might retirement 'cohorts' work?
6. Mutual versus owned	What can we learn from harsh climates - finances of the Inuit or the Bushmen?
7. Sustainability	Is there a way to value abundance rather than scarcity?
8. Theory versus practice	Rejecta Economica – what might be learned from discarded economics?





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*"Towards better policies through shared investment research"*

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Written by: WestLB


The WestLB paper provides a commentary from the perspective of the financial markets on the product-level standard proposed by The Climate Conservancy...

 0.99 0

**A Portfolio Approach to Climate Change Investment and Policy**

Written by: Z/Yen


This report is intended to provide an illustration of the application of portfolio modelling to climate change investment. Using data published by the...

 4.14 582

**A Role for Philanthropy**

Written by: Next Earth Foundation


The challenge of addressing climate change has arrived at a time when the philanthropic sector is experiencing



**A Safer World**

Written by: CA Cheuvreux

The growing political will to measure and control the impact of industrial activities on the environment and



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search...

## Latest Reports

- Building Business Resilience to Inevitable Climate Change. Carbon Disclosure Project Report: Global Electric Utilities
- US Climate Bill: "Born to be Mild"
- Renewable Energies: Sunnier Times Ahead, Once Storms Have Cleared the Air

## Get involved

The London Accord is simple, get more recognition and value from research by sharing what you are about to archive. If you or your firm are interested in exploring participation and funding the London Accord, please [Contact Us](#)

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# The Global Financial Centres





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SHOT ON LOCATION City Of London  
QUANTUM FINANCE PROVIDED BY Z/en Group Limited  
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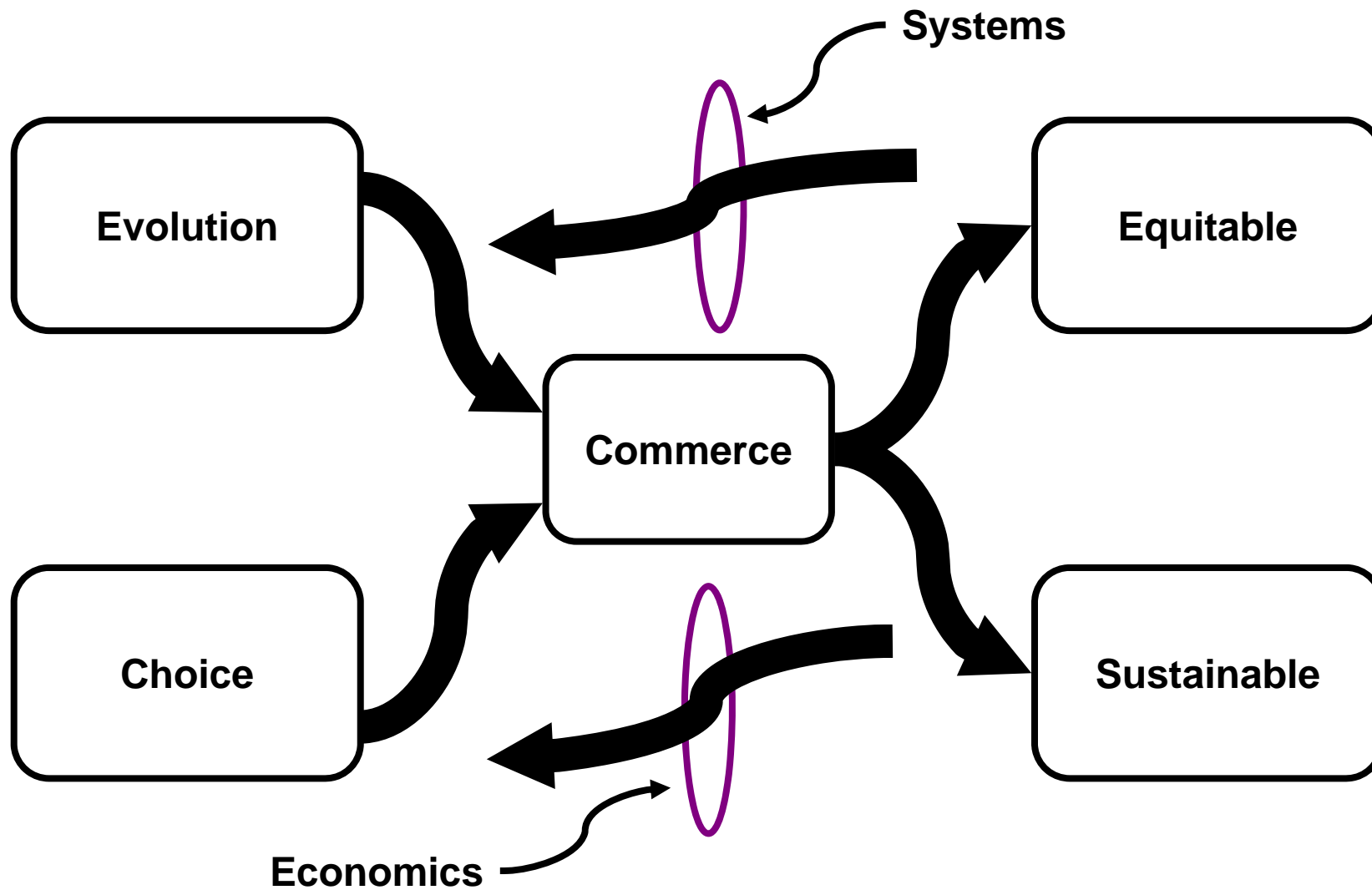
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# Road Map







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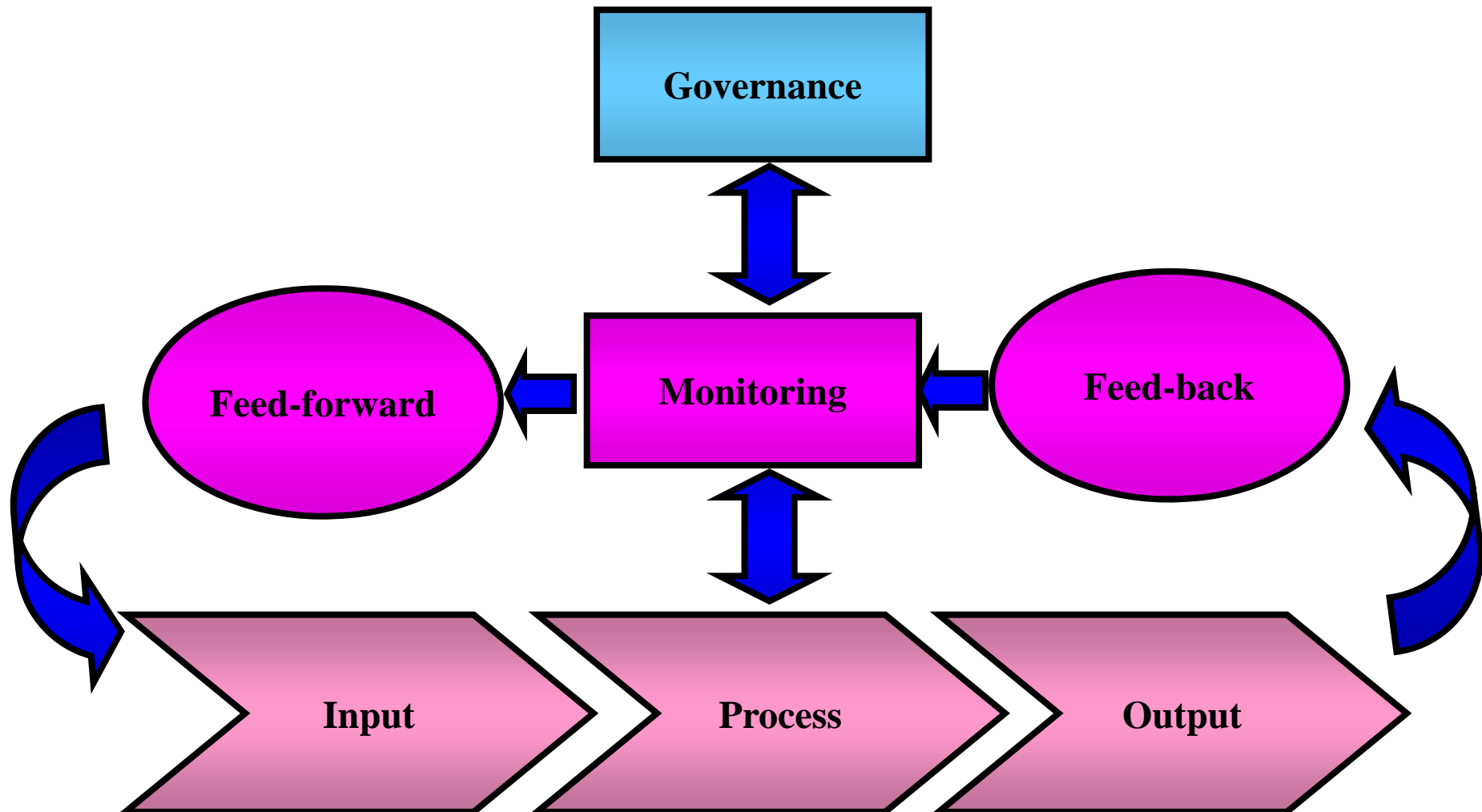
# The Price of Fish





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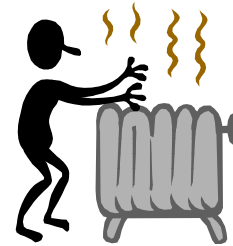
# Systems Theory - IPOFMFG



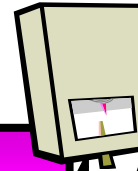
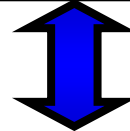


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# Please Don't Try To Do Systems Theory At Home!



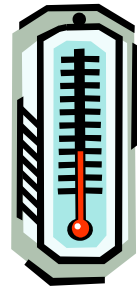
Governance



Feed-forward

Monitoring

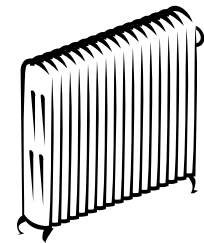
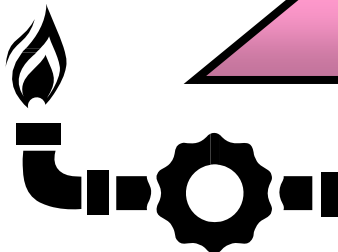
Feed-back



Input

Process

Output

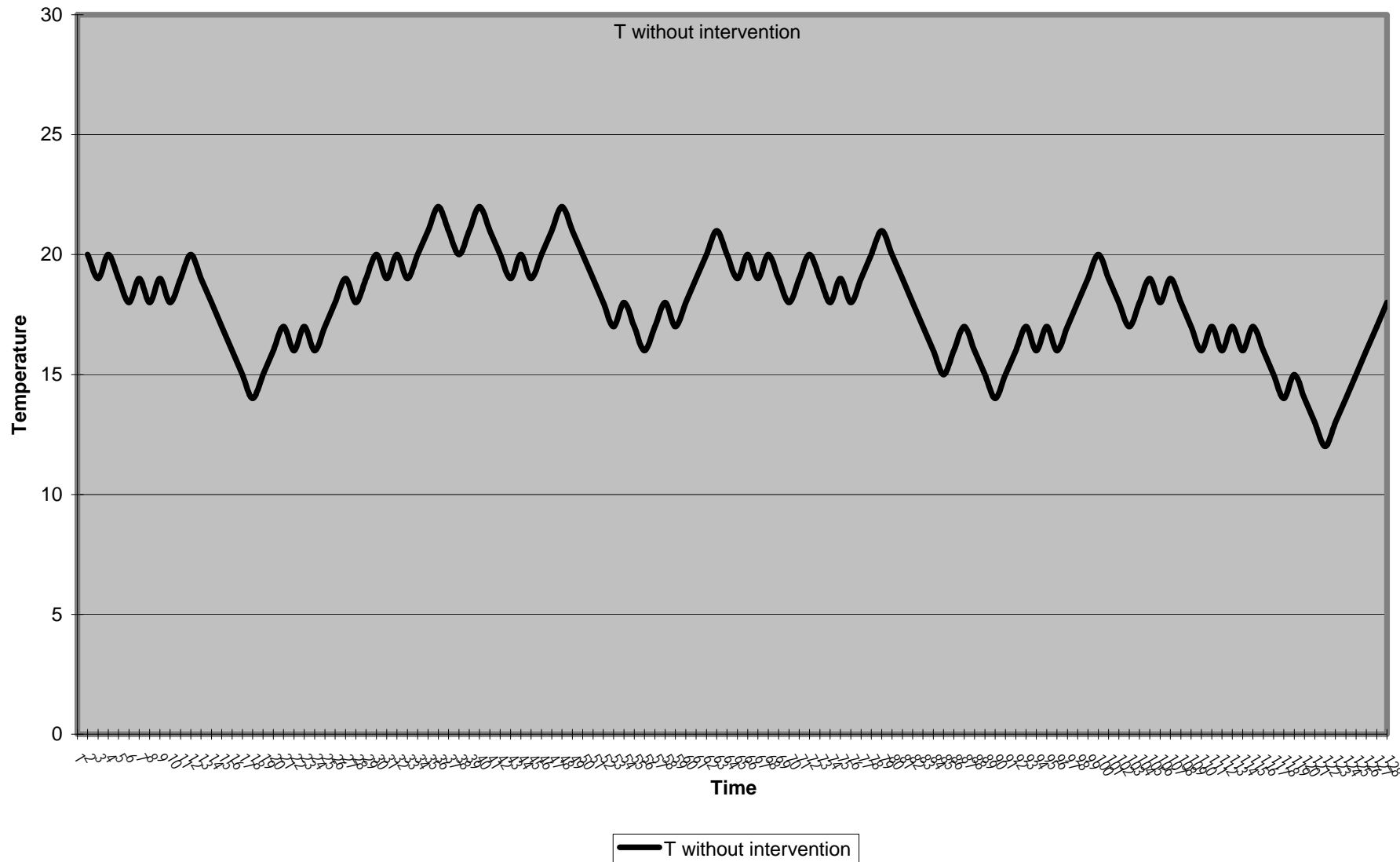






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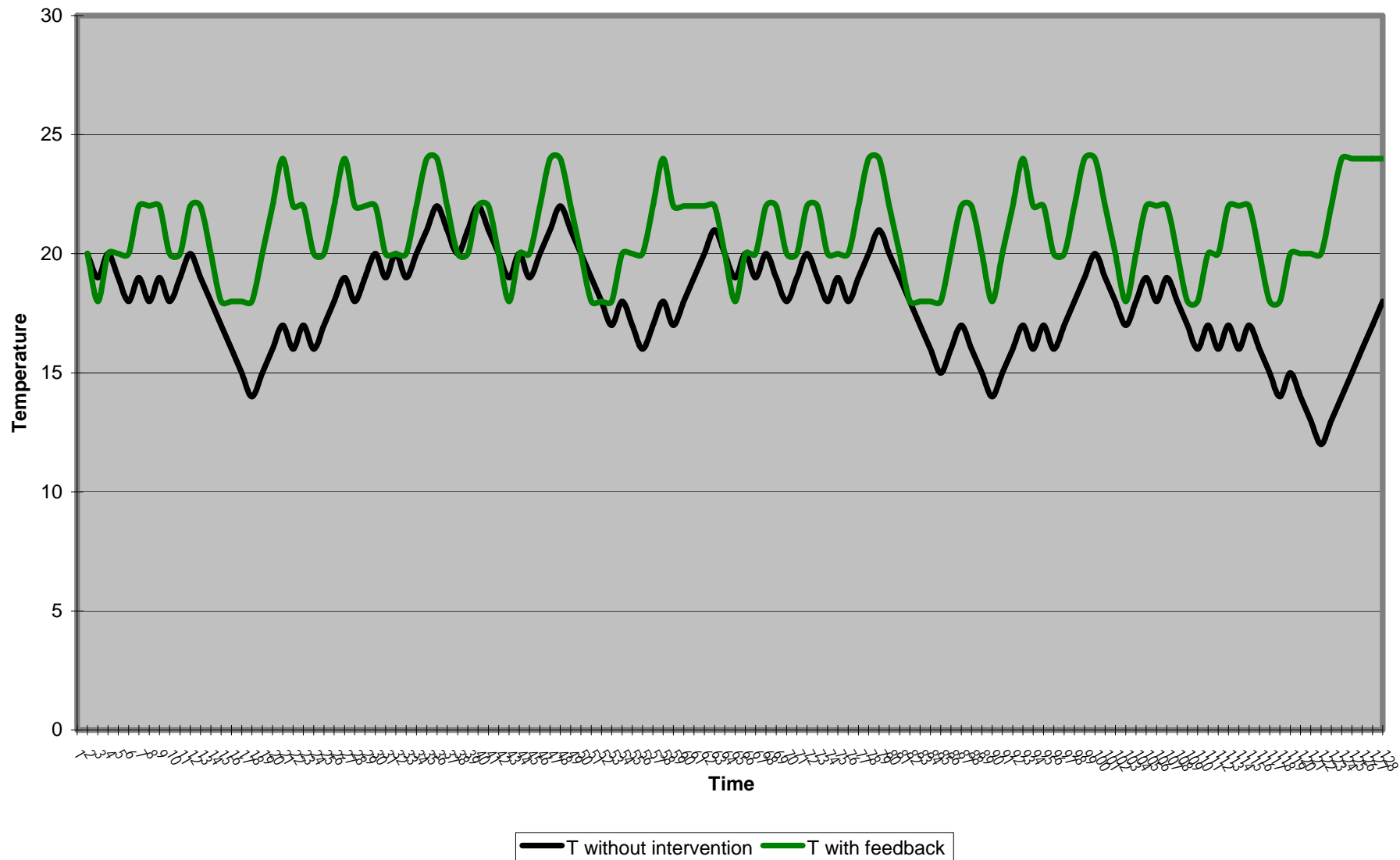
# Global Warming Goes For A Random Walk





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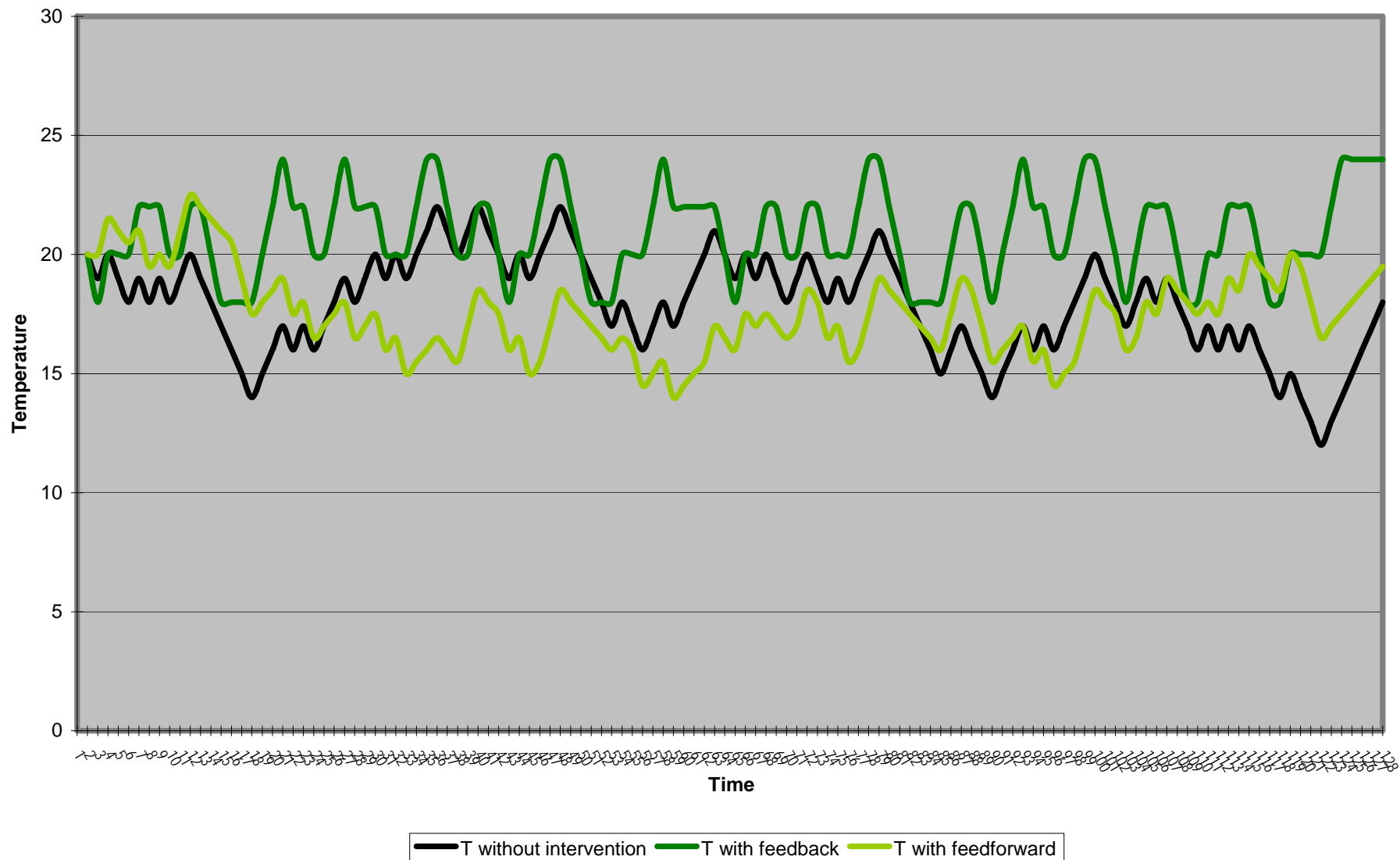
# Heating System Tries To Hit 20°C





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# Person Knows Up/Down, Tries To Hit 20°C

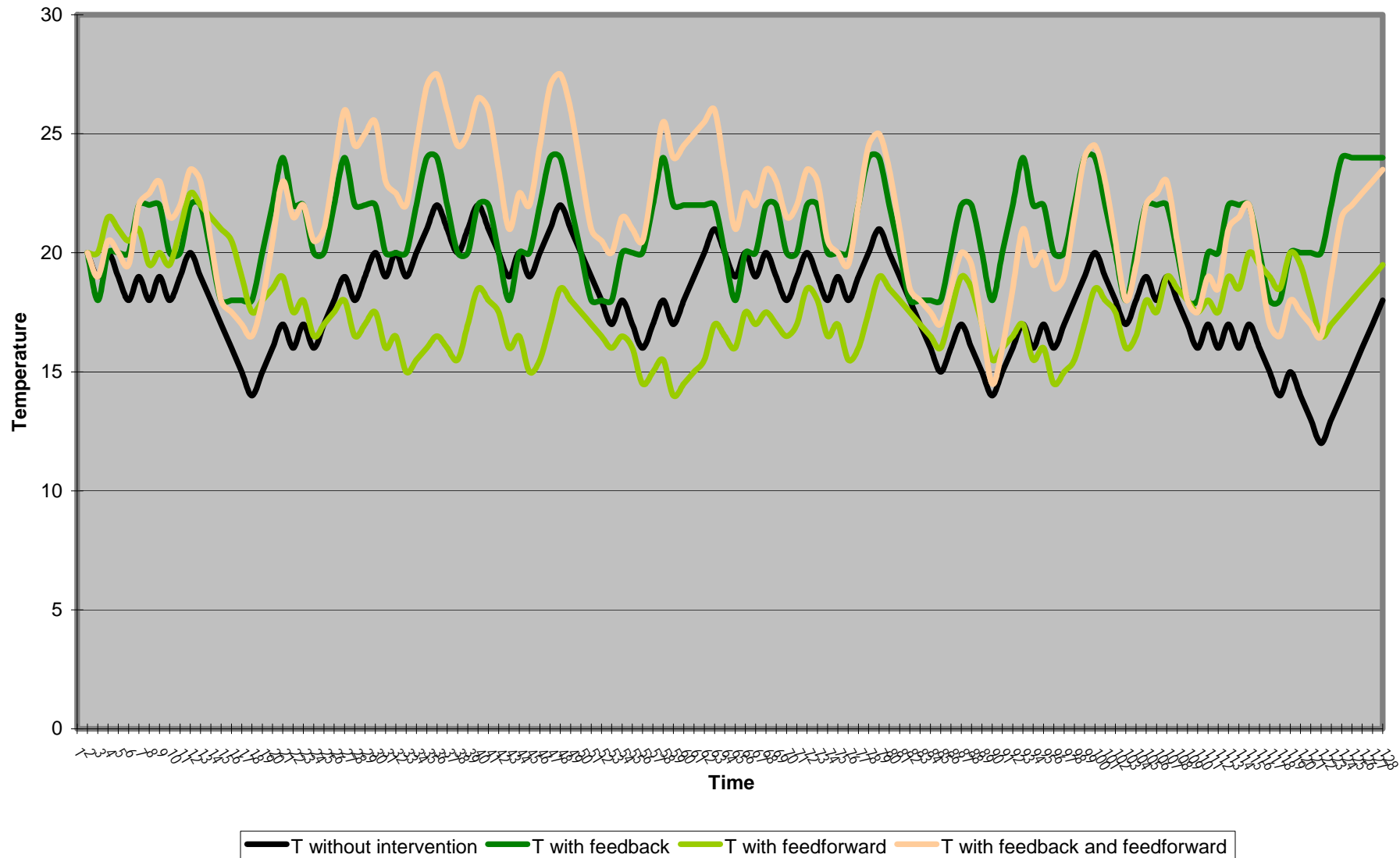






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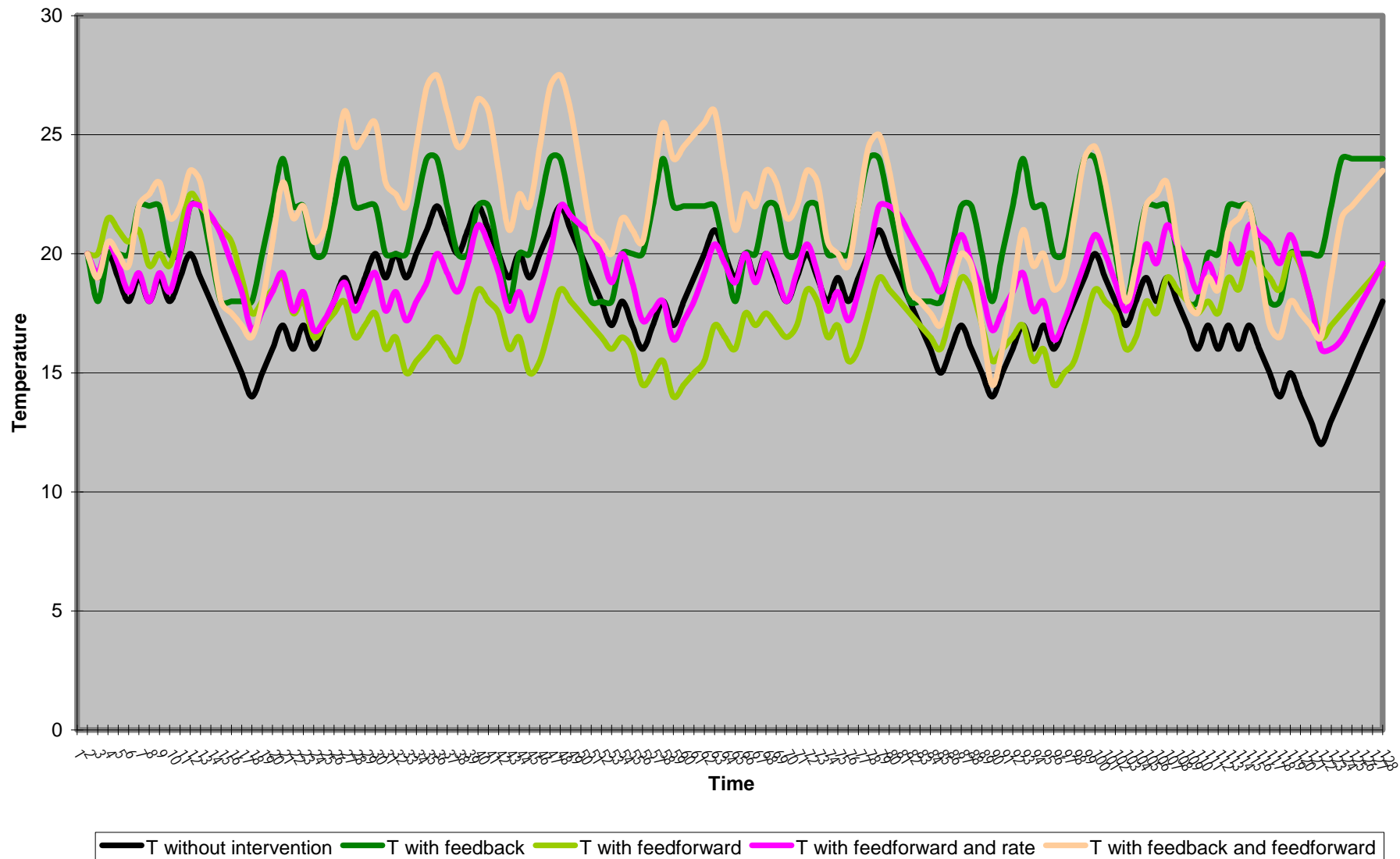
# Person And Heating System Working Together ... hmmm





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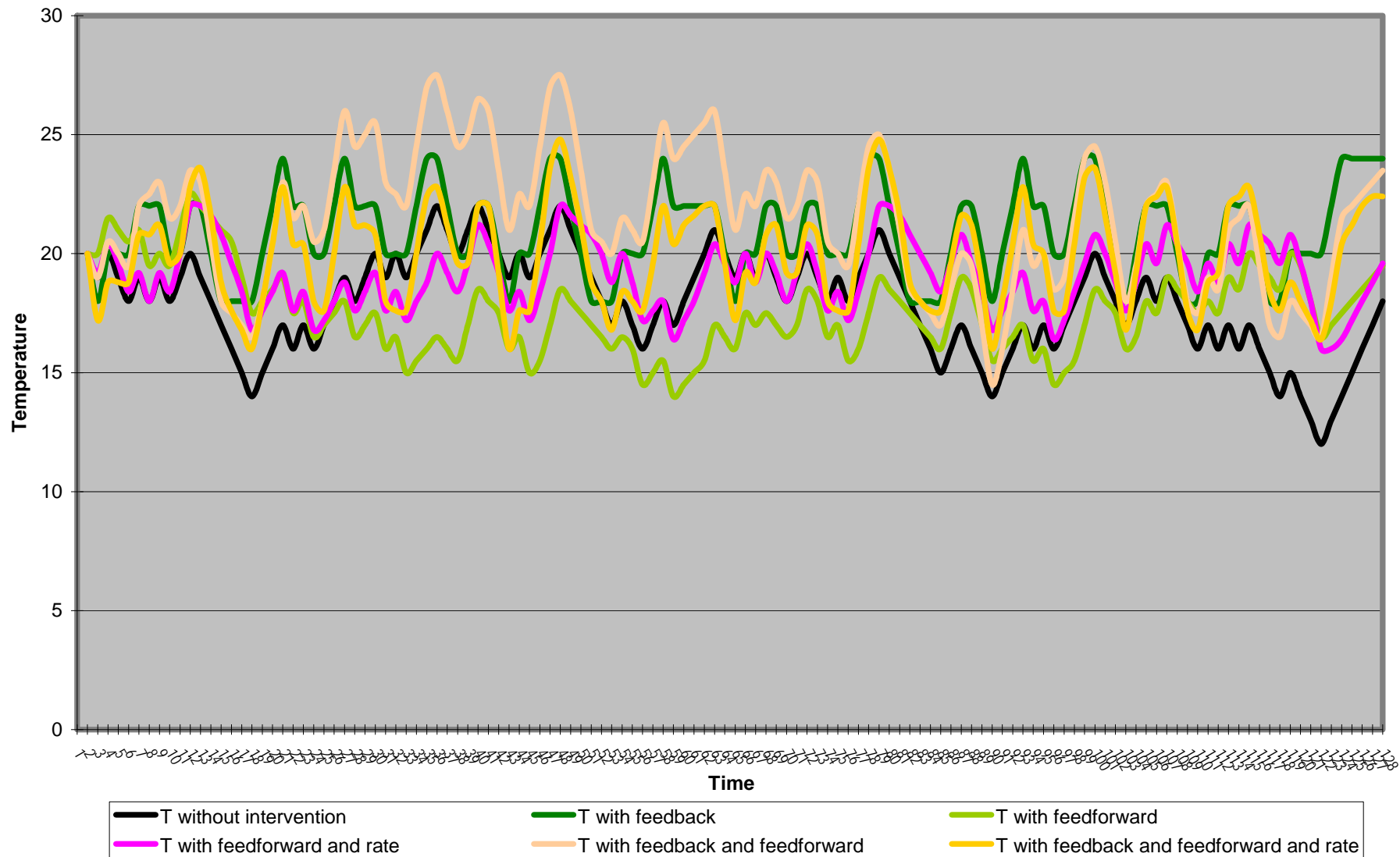
# Person With Perfect Foreknowledge, Tries To Hit 20°C





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# Person And Heating System With Perfect Foreknowledge, Try To Hit 20°C

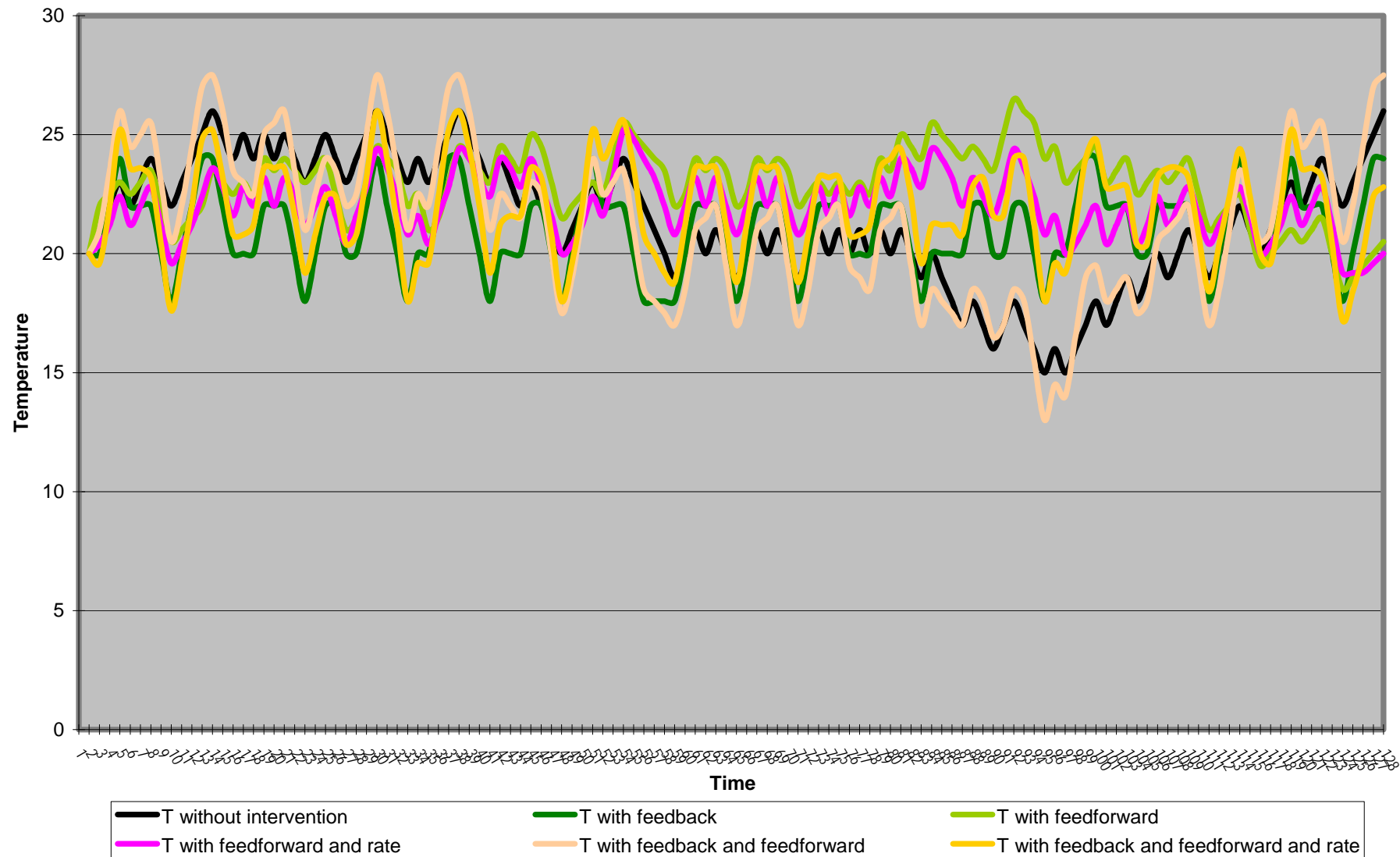






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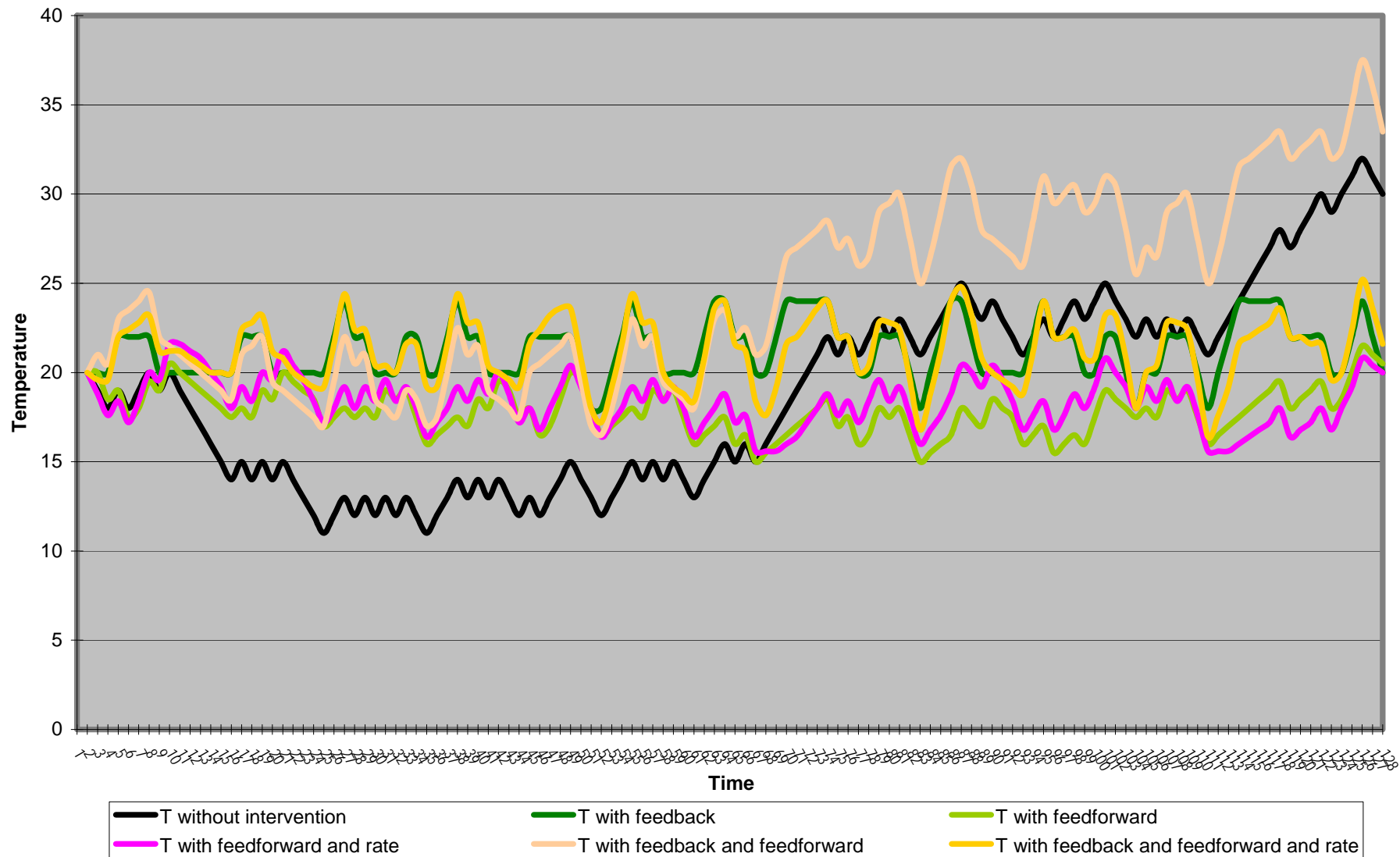
# Looks Like A Market - 1?





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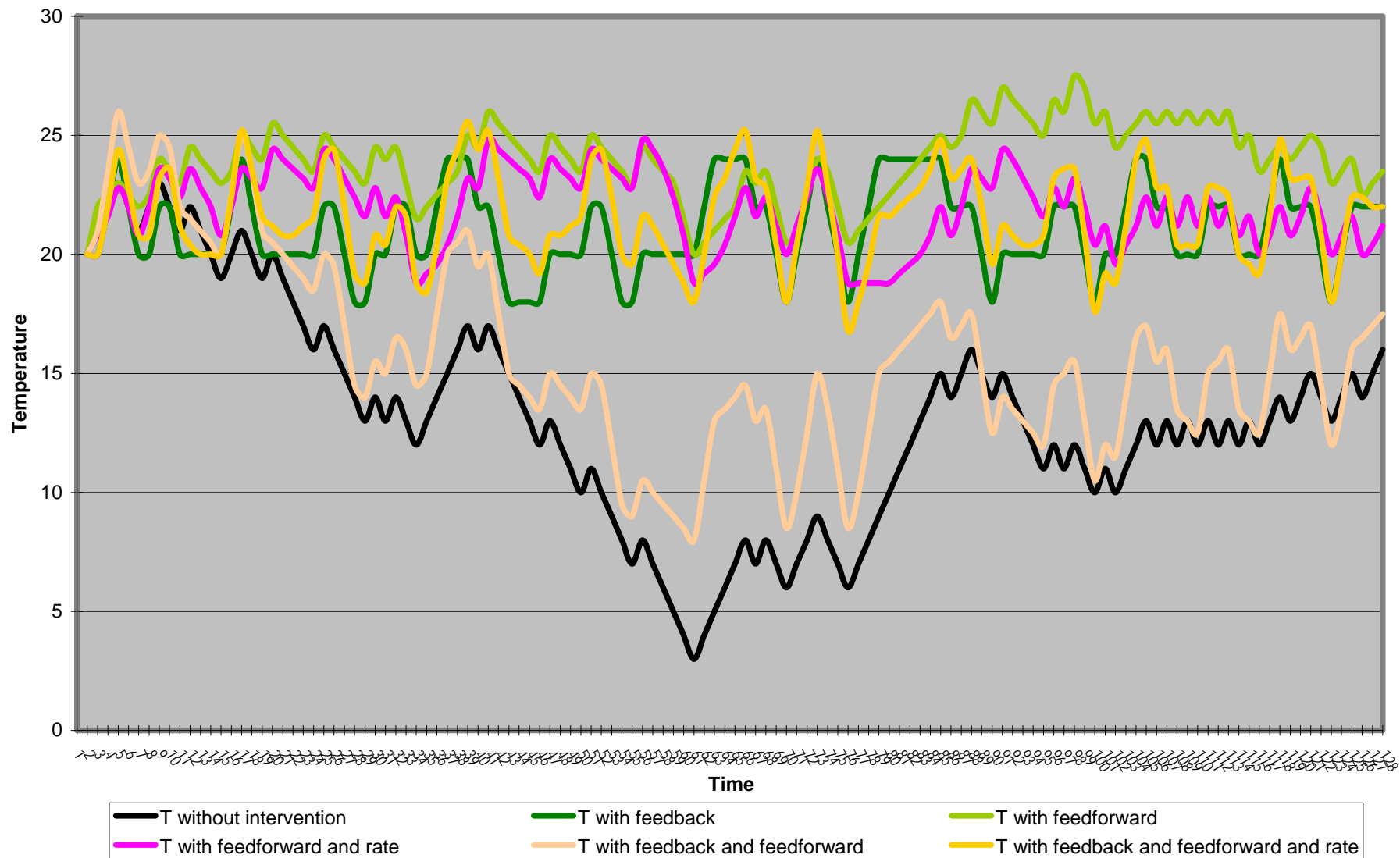
# Looks Like A Market - 2?





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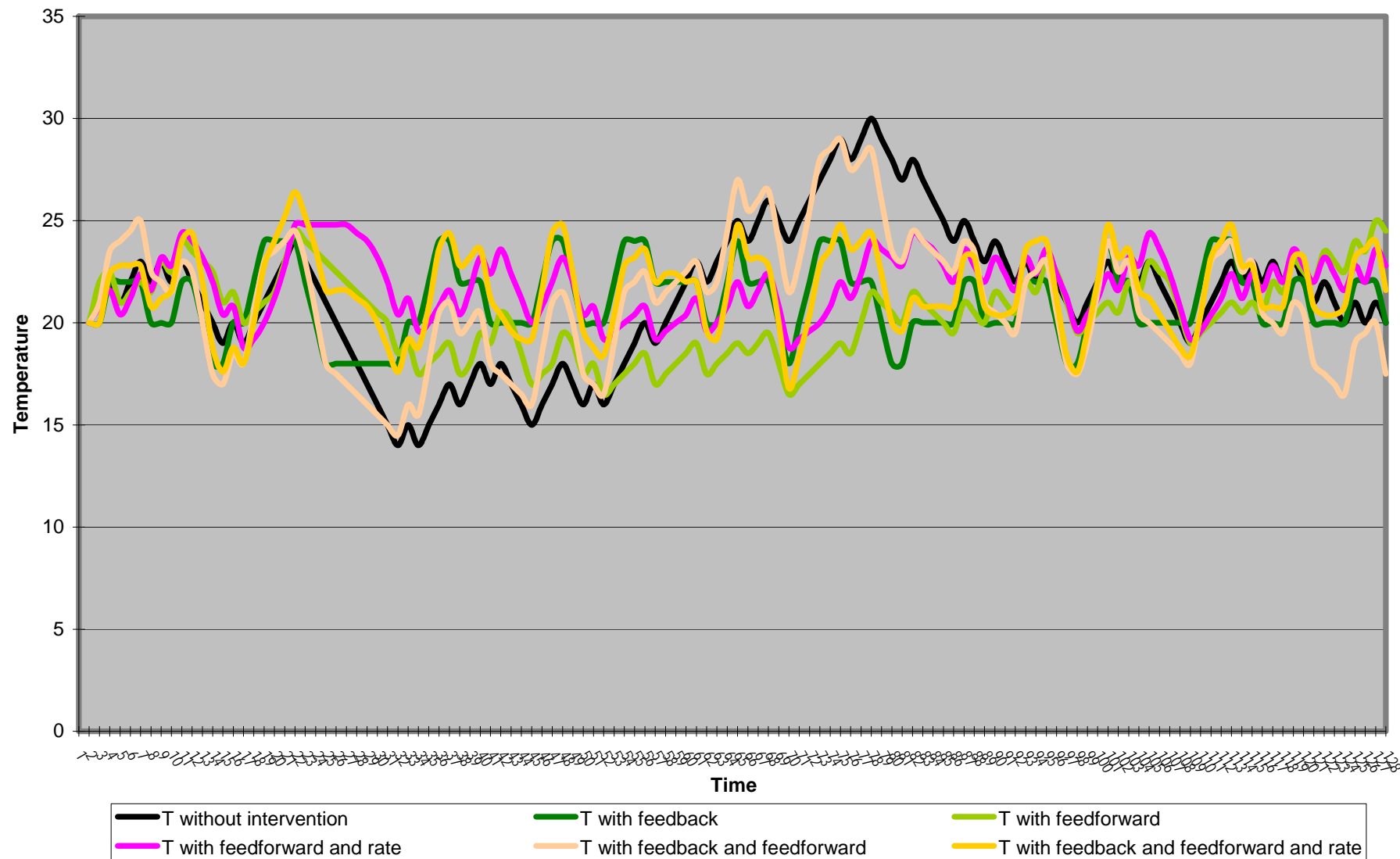
# Looks Like A Market – 3?





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# Looks Like A Market – 4?

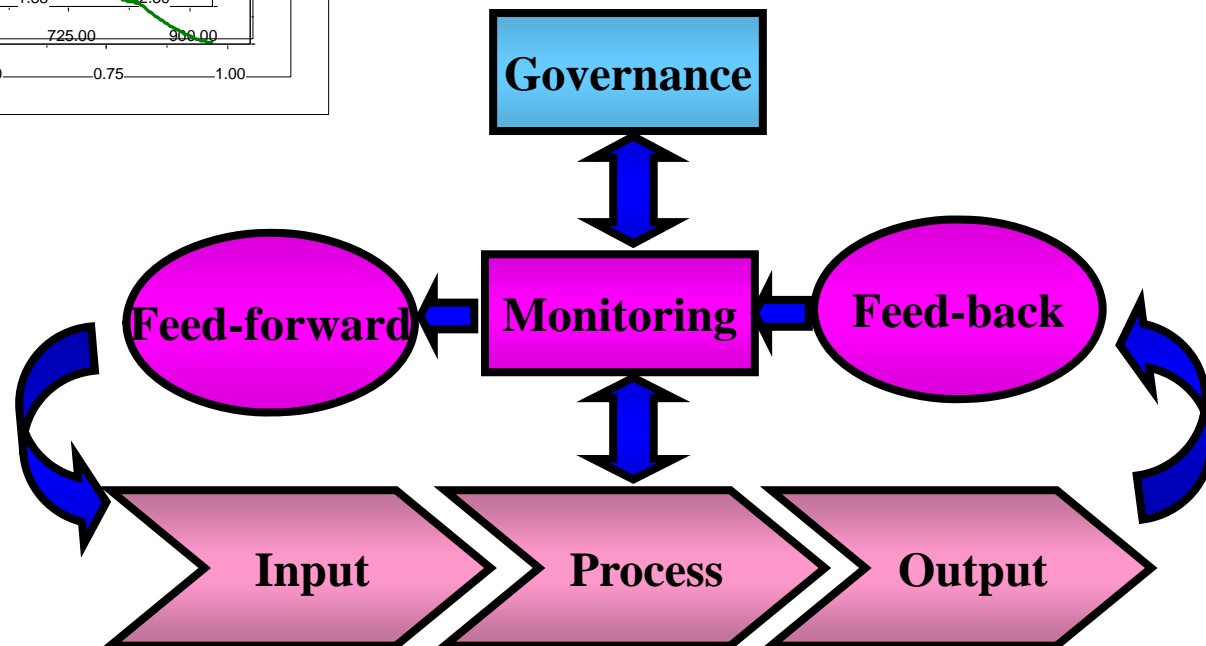
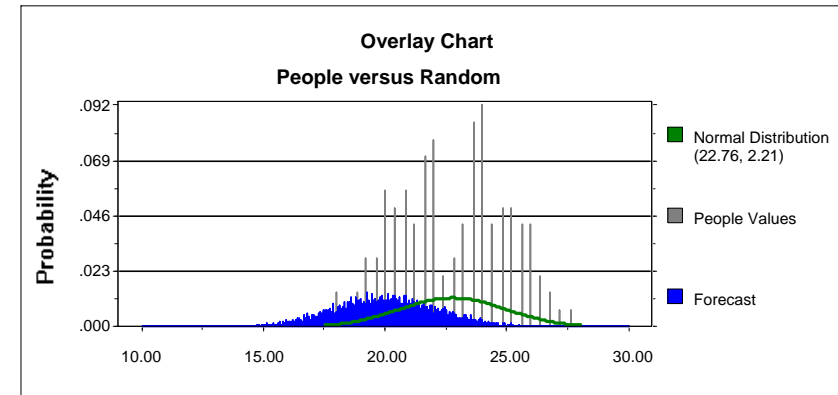
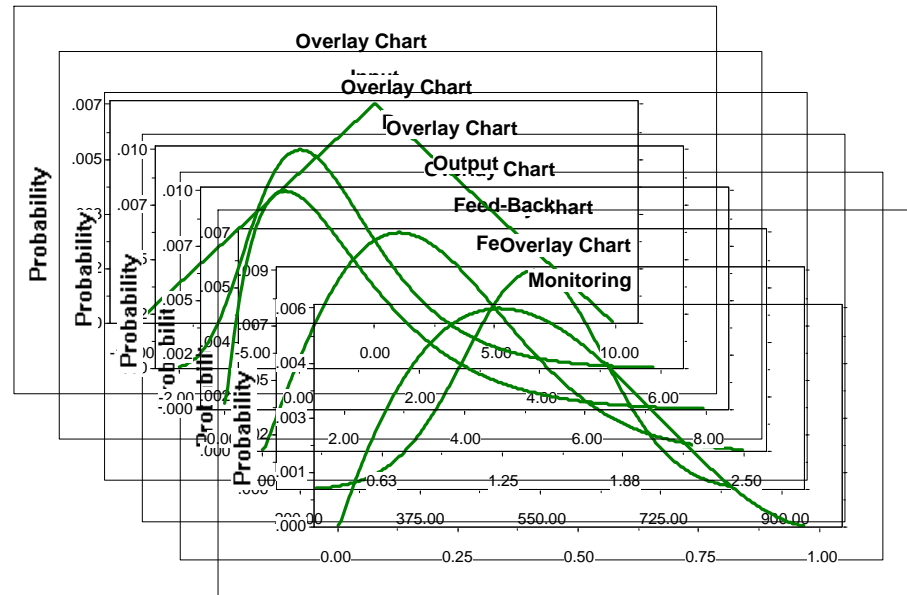






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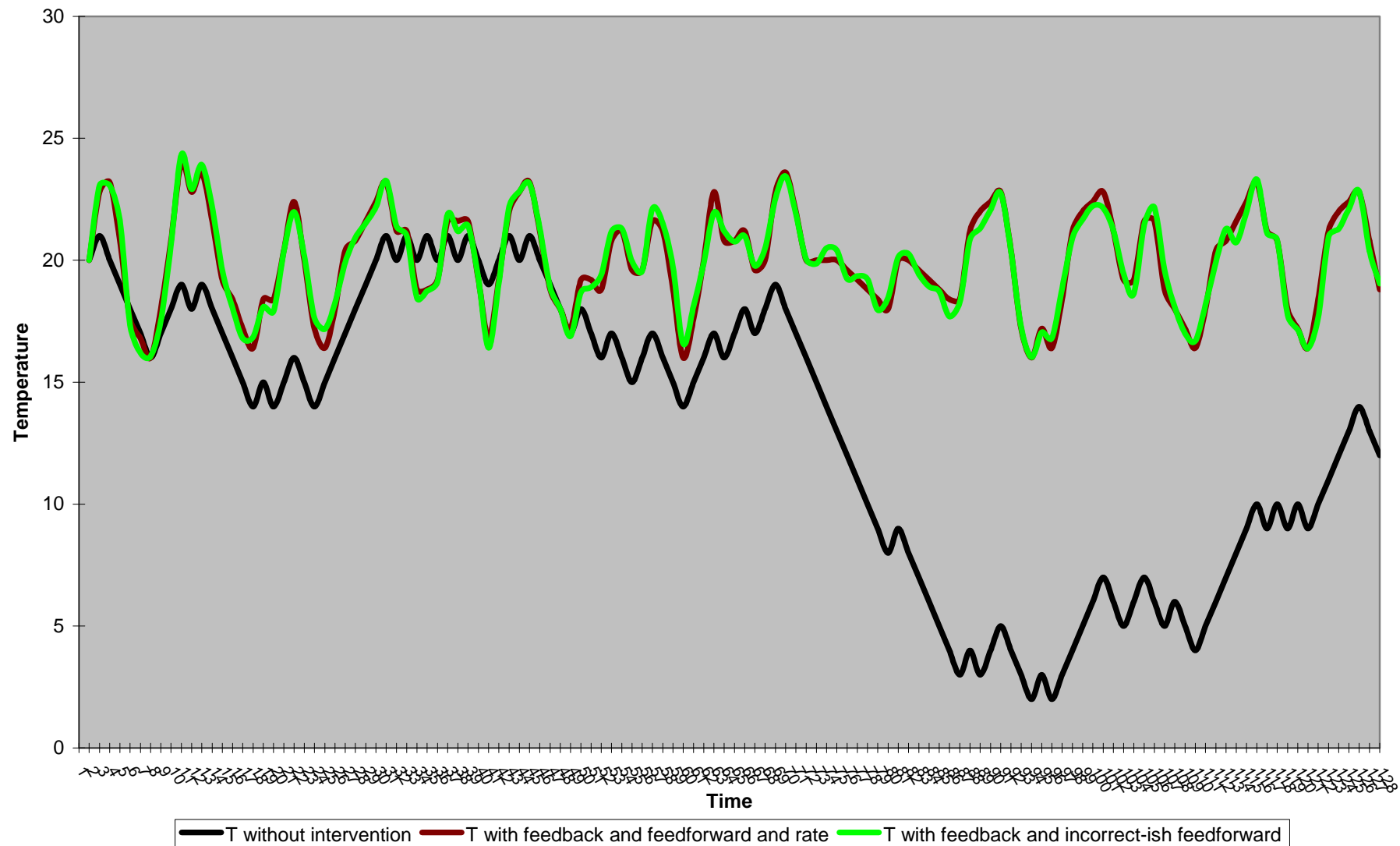
# Stochastic Systems Theory





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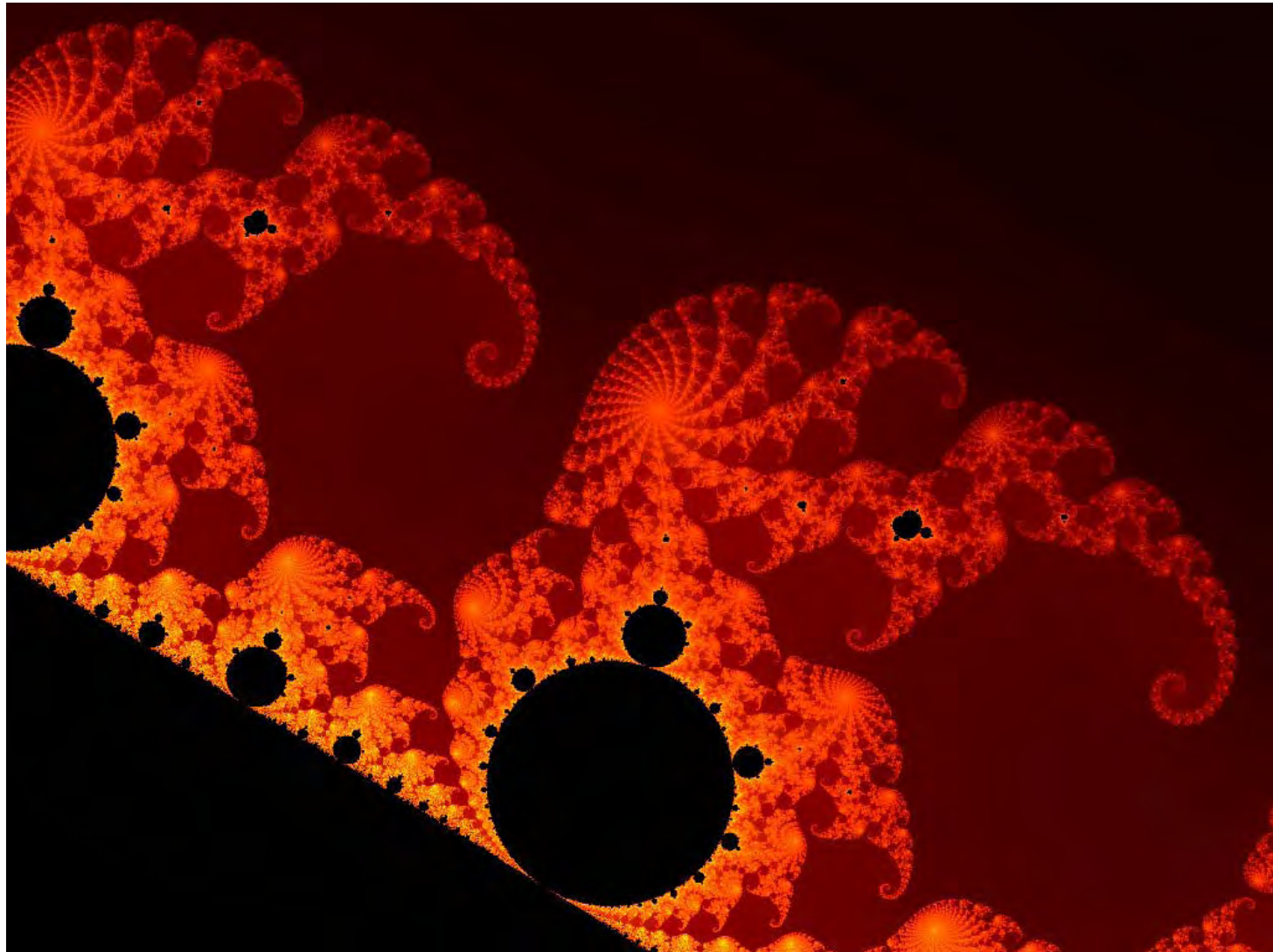
# Husband And Wife In Strife?!?





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# The Edges of Chaos



Mandelbrot Set,  $Z_{n+1}=Z_n^2+C$ , image courtesy of Evercat and Wikipedia



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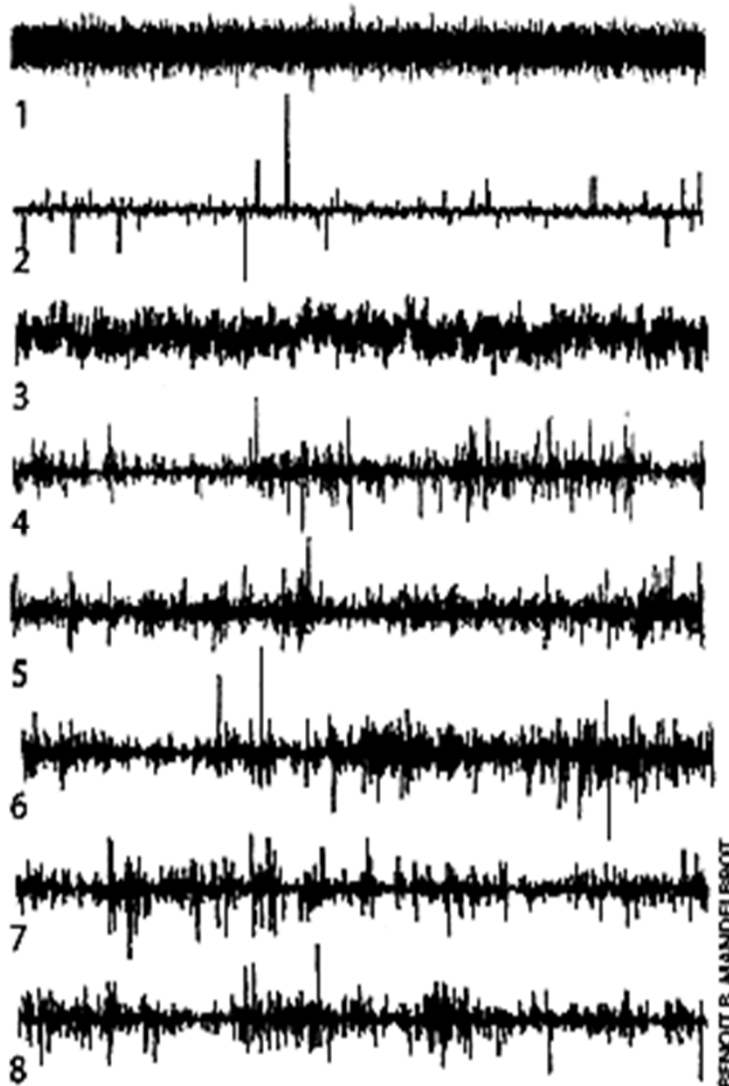
# 10 Years Seem Like 10 Days





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# Spot The Fake



1. Fake – Bachelier random walk
2. Fake – random walk, Mandelbrot adjustments
3. Fake – random walk, Mandelbrot adjustments
4. Fake - Mandelbrot multifractal
5. Real - IBM share prices
6. Real - Dollar-Deutsche Mark
7. Fake - Mandelbrot multifractal
8. Fake - Mandelbrot multifractal





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# Life Is A Bit Complex





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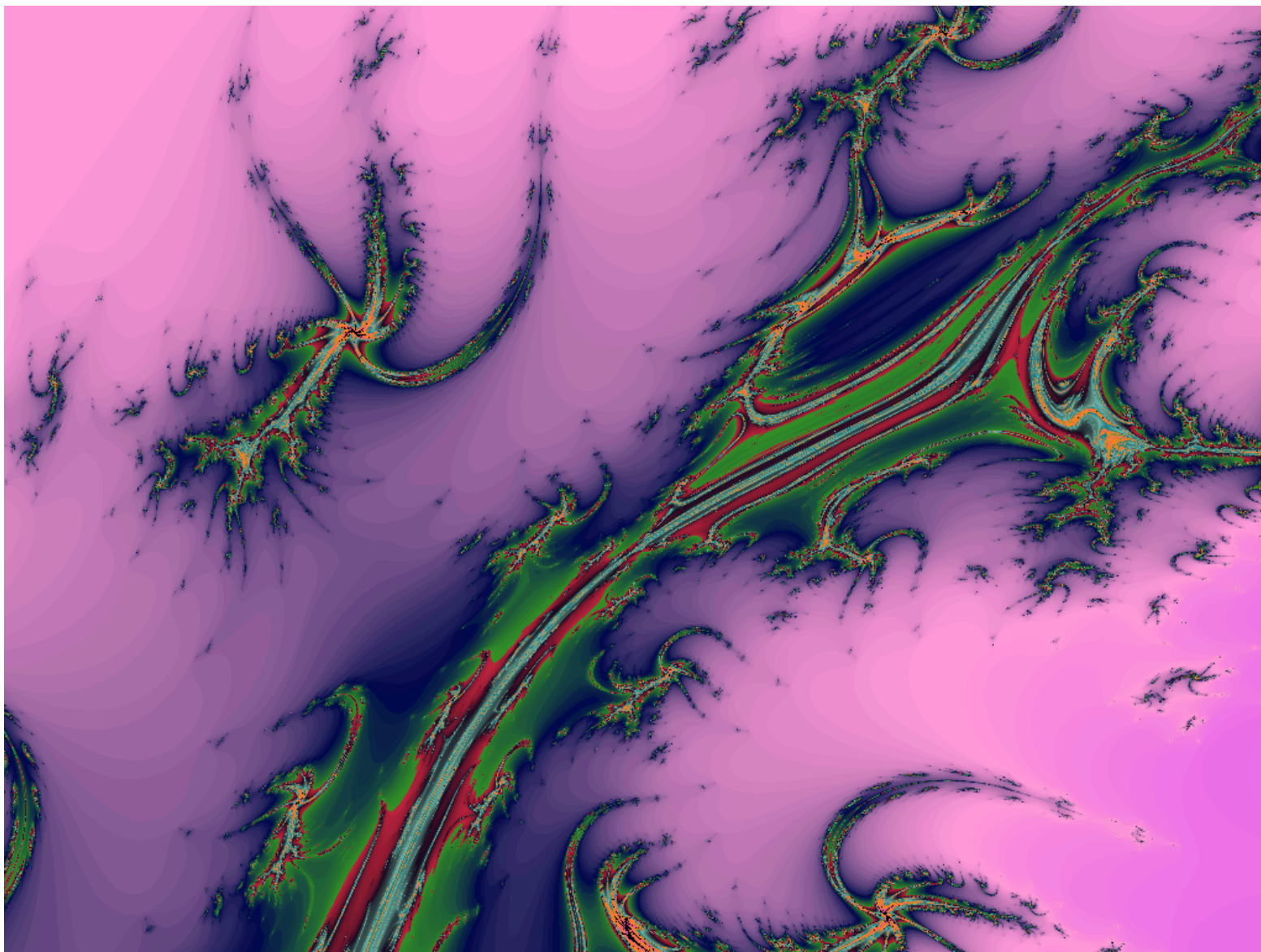
# Dynamic Systems





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# Predictably Chaotic

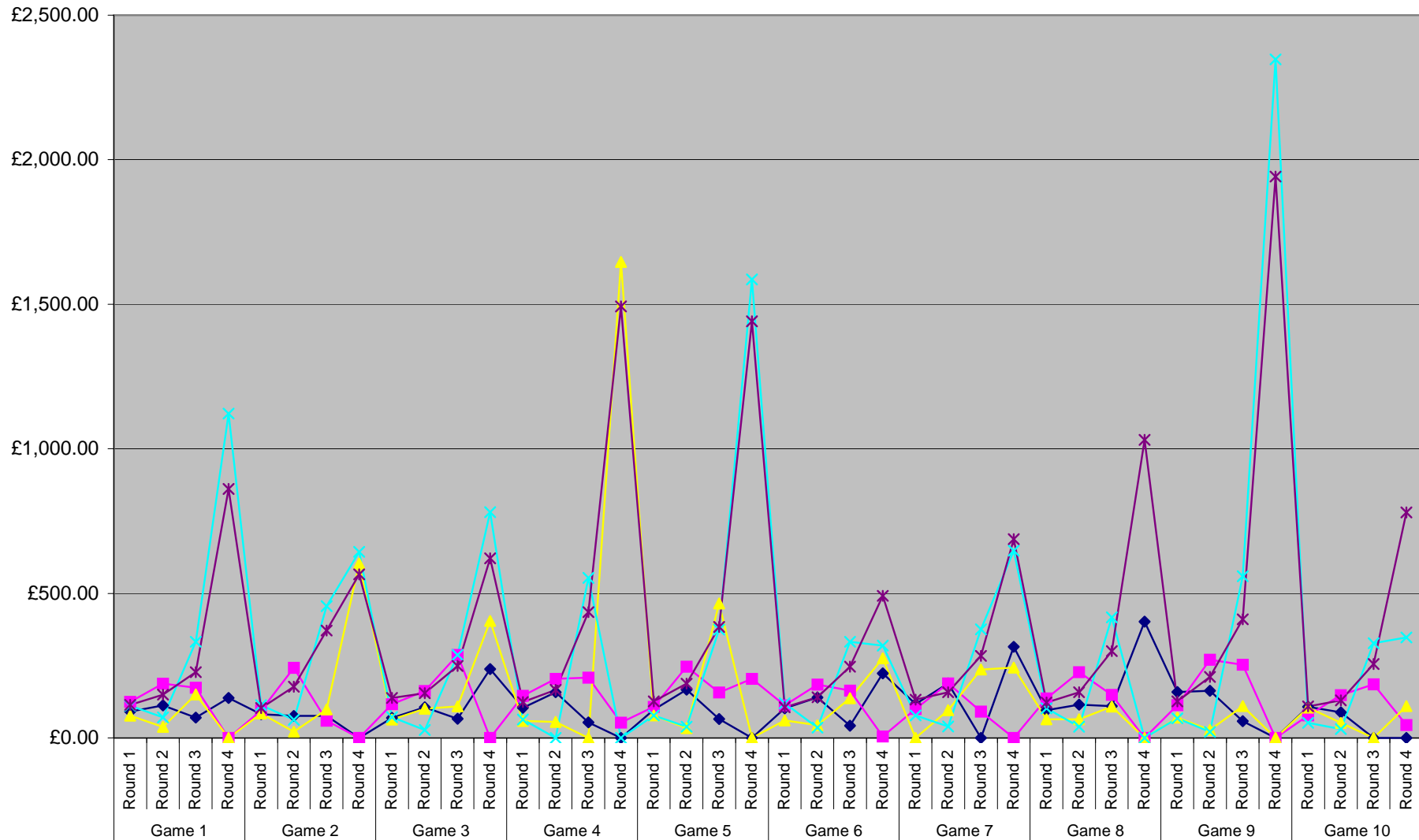


Fractal image courtesy of Noel Giffin, [spanky.triumf.ca](http://spanky.triumf.ca)



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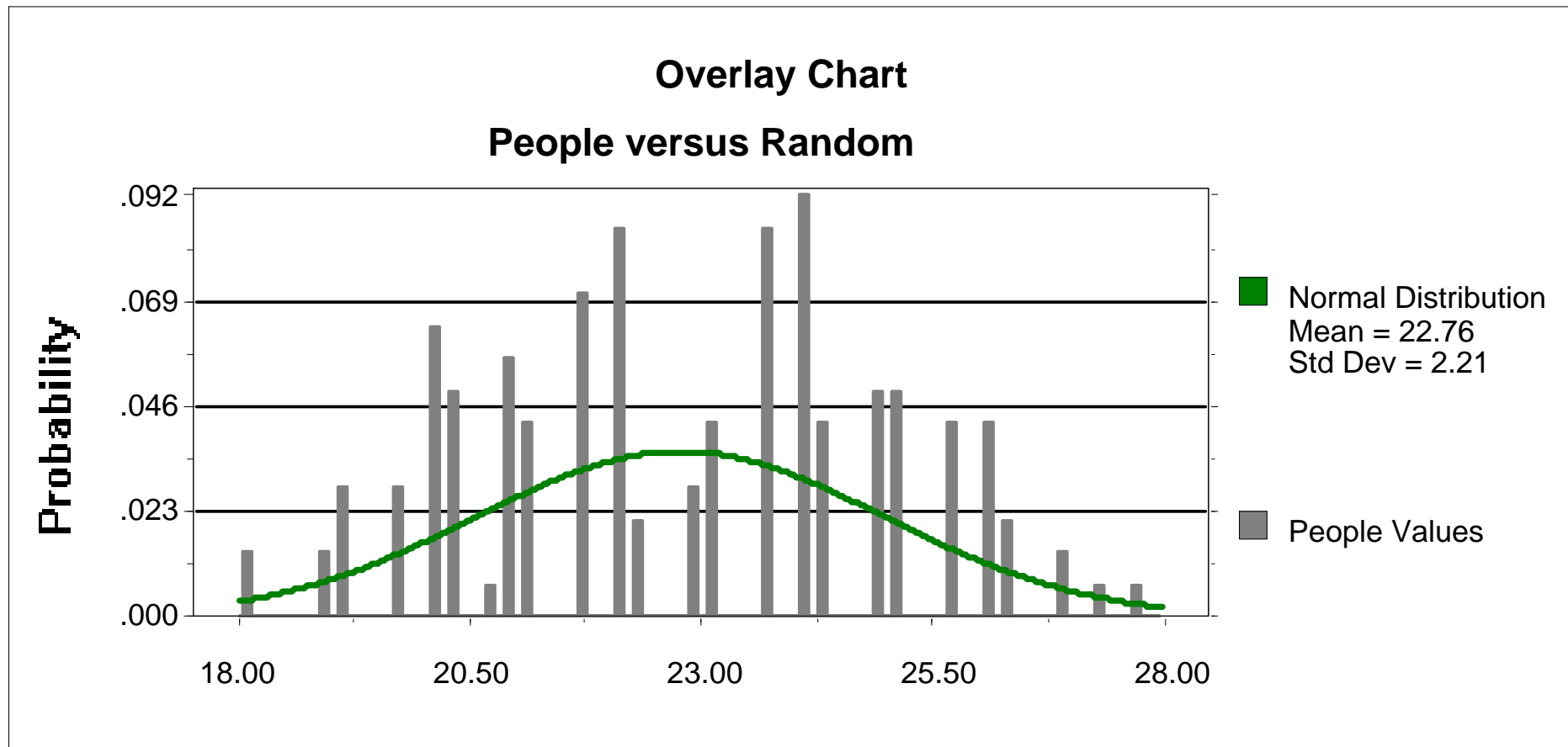
# 10,000 Fed-Forward Maniacs





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# Leptokurtic Fat Tails

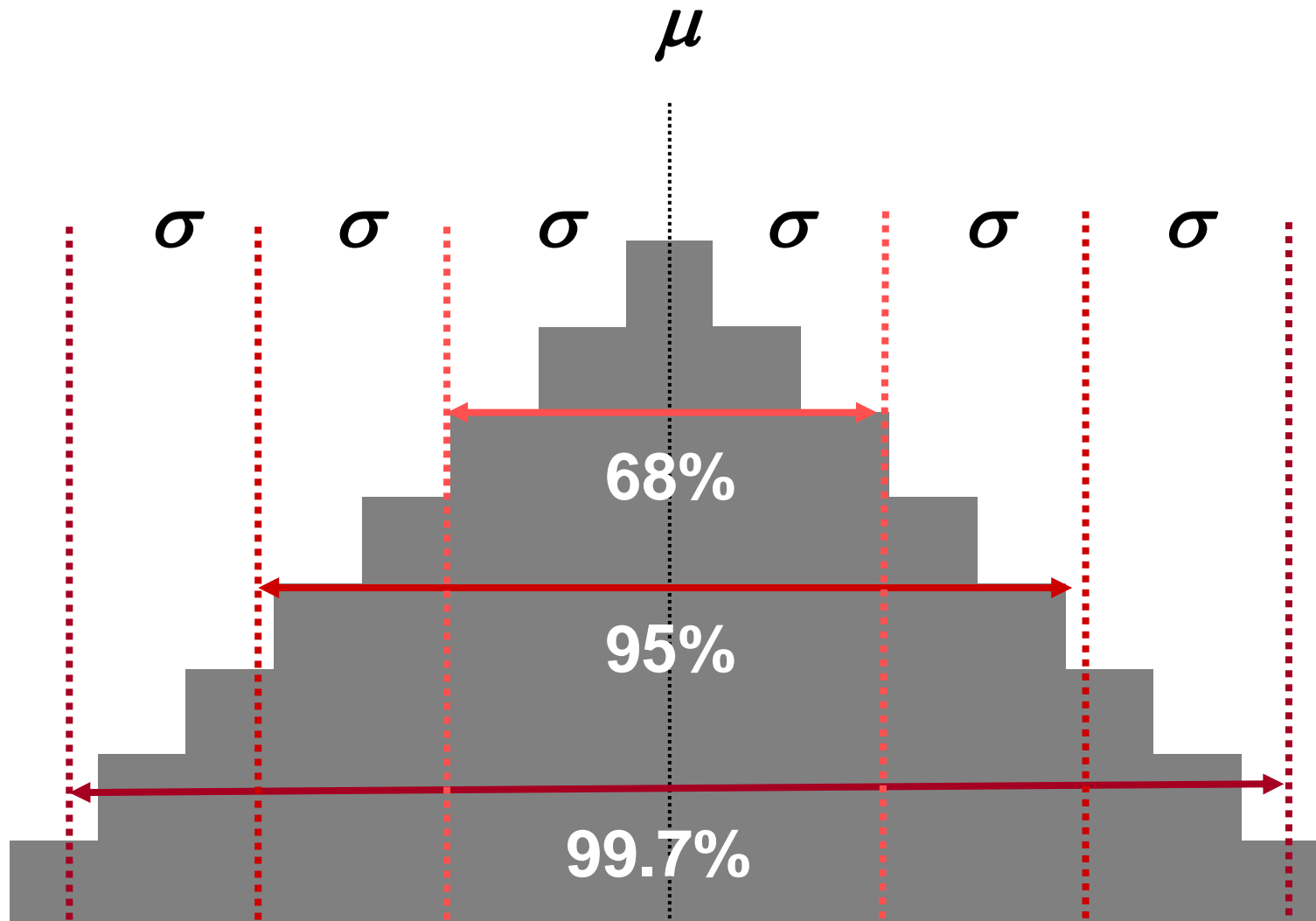






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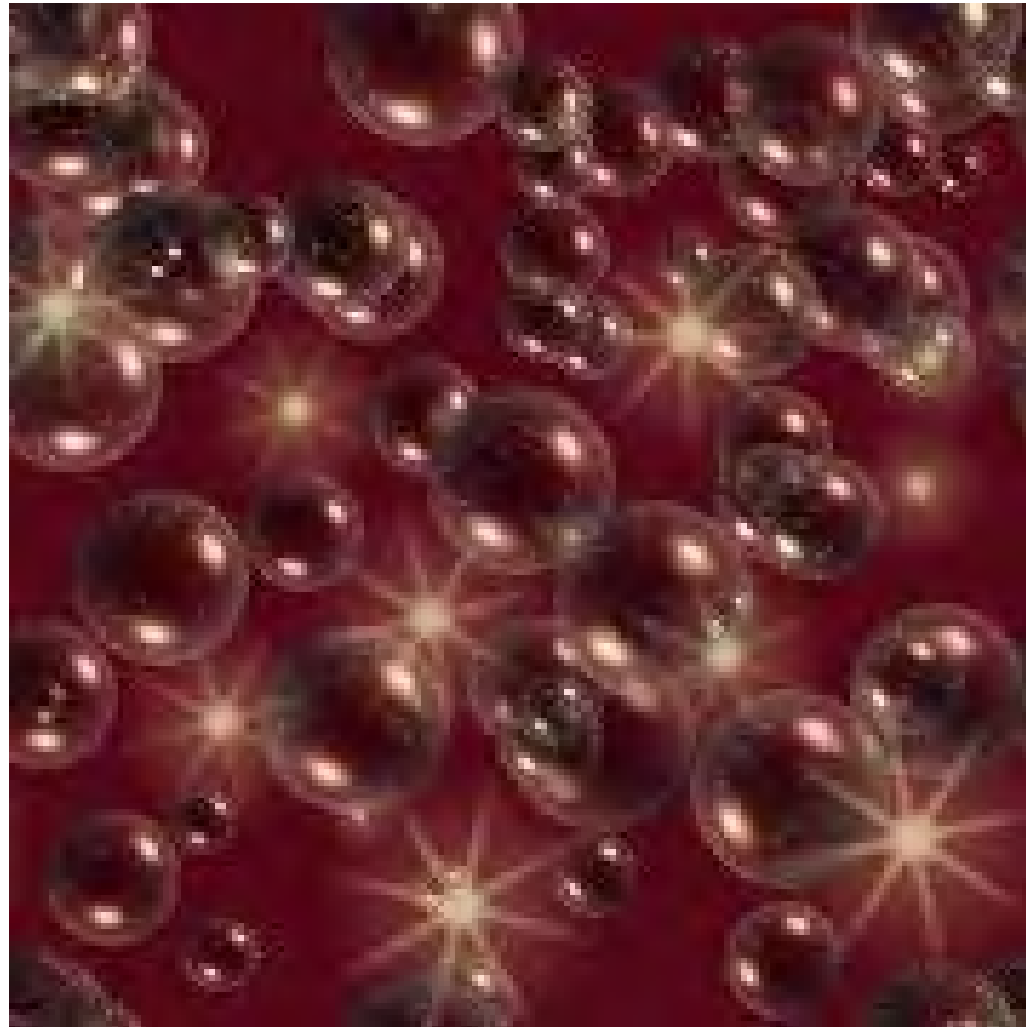
# Once In 300 Years?





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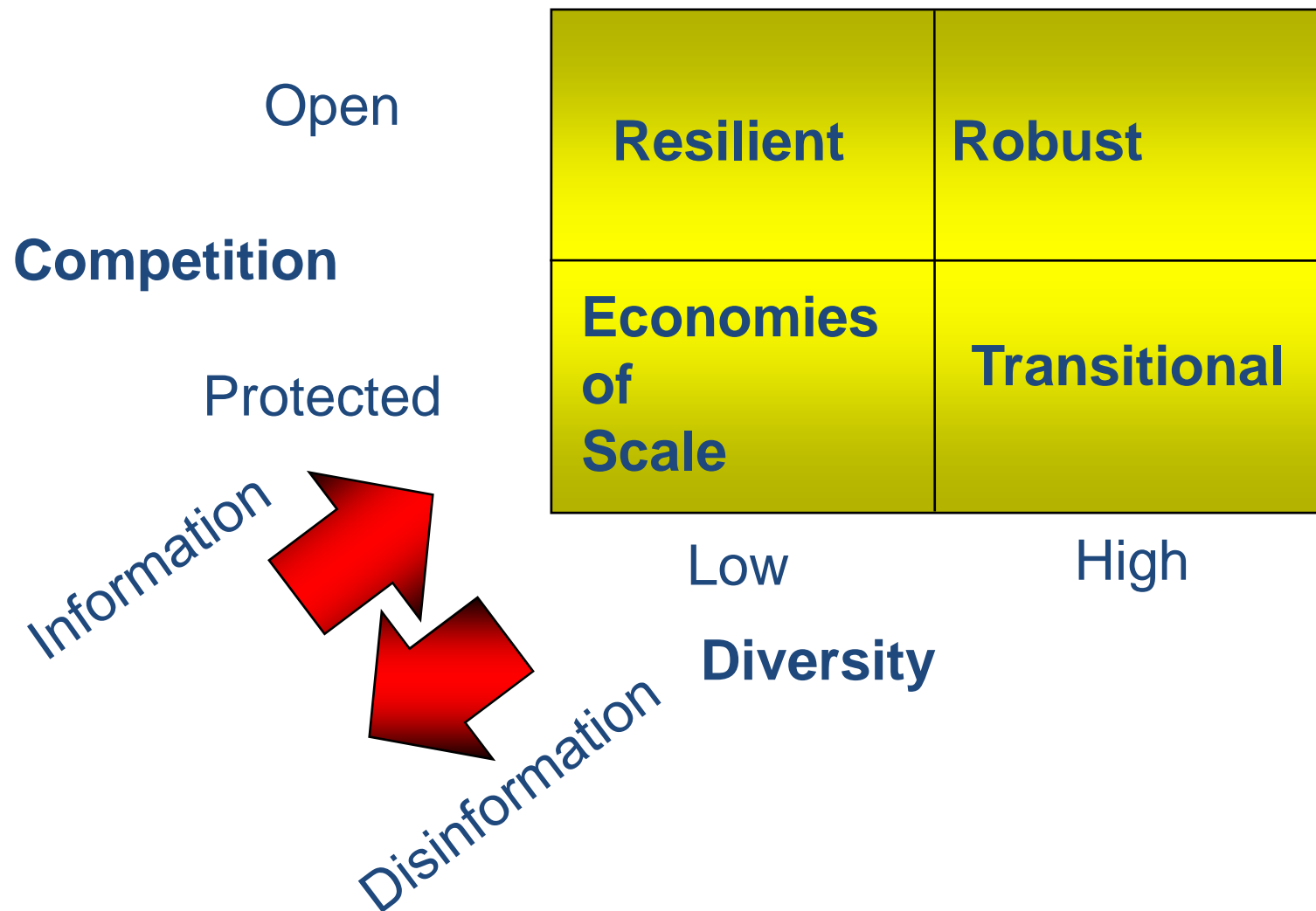
# Bubbles





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# Diversity & Competition





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# See Through Transparency

- ◆ Transparency – meeting standards (controls, timing, regulation), publication/disclosure, management, independence
- ◆ Sarbanes Oxley
- ◆ Dodd Frank
- ◆ FSA Disclosure and Transparency Rules – Walker Review
- ◆ ISO 26000 – Social Responsibility



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# Systems, Yes; But What of ICT?

Because we can...

- ◆ Transparency
- ◆ Globalisation
- ◆ Low latency, high frequency, trading
- ◆ Stochastic techniques





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# Mechanisms or Faiths?

- ◆ Utility Banking
- ◆ A UK WIR
- ◆ Confidence Accounting
- ◆ See Through Leverage
- ◆ Pension Indemnity Assurance
- ...
- ◆ Cyber Reinsurance
- ◆ IP Options Markets
- ◆ R&D Lotteries
- ◆ Index Linked Carbon & Forestry Bonds



“Get a detailed grip on the big picture.”  
*Chao Kli Ning*

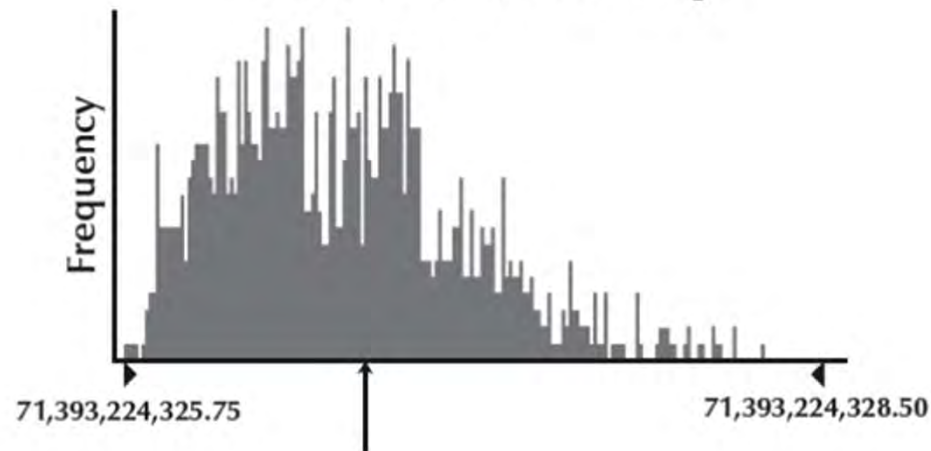


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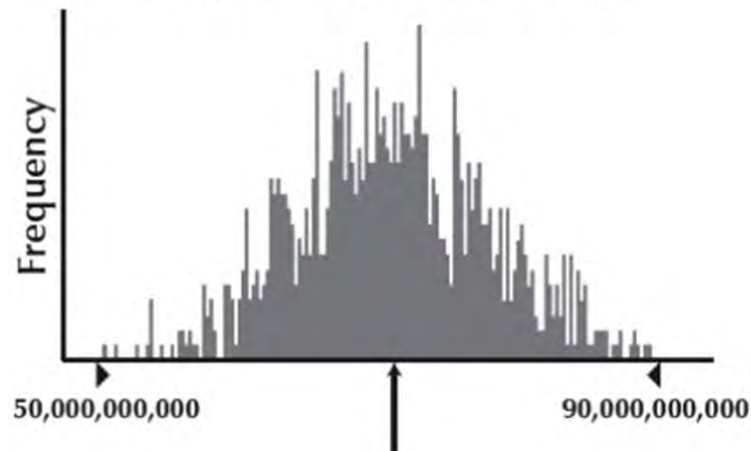
# If you want a sure thing ...

*Three Scenarios – Assets Exactly £71,393,334,327*

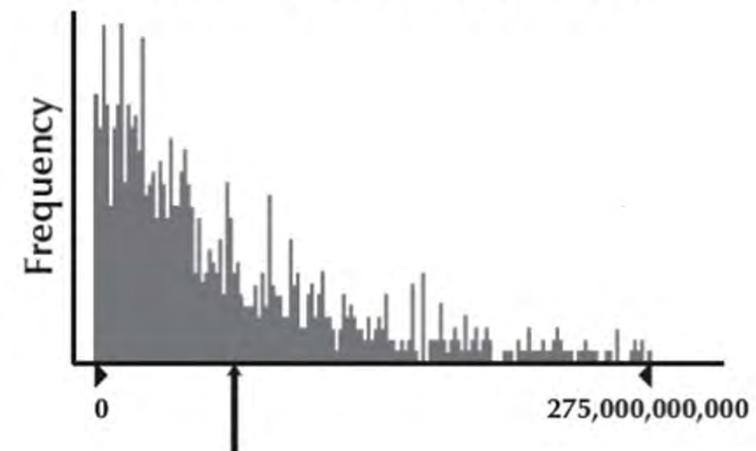
Scenario A: The Sure Thing



Scenario B: The Wide Range



Scenario C: Skew You, Auditor





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# ... be an auditor

## Unconfident Accounting – RBS 2008

### Balance sheets at 31 December 2008

		Group		Company	
	Note	2008 £m	Restated 2007 £m	2008 £m	2007 £m
<b>Assets</b>					
Cash and balances at central banks	11	12,400	17,866	—	—
Loans and advances to banks	11	138,197	219,460	27,031	7,686
Loans and advances to customers	11	874,722	828,538	—	307
Debt securities subject to repurchase agreements	30	80,576	107,651	—	—
Other debt securities		186,973	187,005	—	—
Debt securities	14	267,549	294,656	—	—
Equity shares	15	26,330	53,026	—	—
Investments in Group undertakings	16	—	—	42,196	43,542
Settlement balances		17,832	16,589	—	—
Derivatives	13	992,569	277,402	1,168	173
Intangible assets	17	20,049	49,916	—	—
Property, plant and equipment	18	18,949	18,745	—	—
Deferred taxation	23	7,082	3,119	3	—
Prepayments, accrued income and other assets	19	24,402	15,662	489	127
Assets of disposal groups	20	1,581	45,850	—	—
<b>Total assets</b>		<b>2,401,652</b>	<b>1,840,829</b>	<b>70,887</b>	<b>51,835</b>
<b>Liabilities</b>					
Deposits by banks	11	258,044	312,294	1,802	5,572
Customer accounts	11	639,512	682,363	26	—
Debt securities in issue	11	300,289	274,172	14,179	13,453
Settlement balances and short positions	21	54,277	91,021	—	—
Derivatives	13	971,364	272,052	361	179
Accruals, deferred income and other liabilities	22	31,482	34,208	47	8
Retirement benefit liabilities	4	2,032	460	—	—
Deferred taxation	23	4,165	5,400	—	3
Insurance liabilities	24	9,976	10,162	—	—
Subordinated liabilities	25	49,154	38,043	10,314	7,743
Liabilities of disposal groups	20	859	29,228	—	—
<b>Total liabilities</b>		<b>2,321,154</b>	<b>1,749,403</b>	<b>26,729</b>	<b>26,958</b>
Minority interests	26	21,619	38,388	—	—
Equity owners	27, 28	58,879	53,038	44,158	24,877
<b>Total equity</b>		<b>80,498</b>	<b>91,426</b>	<b>44,158</b>	<b>24,877</b>
<b>Total liabilities and equity</b>		<b>2,401,652</b>	<b>1,840,829</b>	<b>70,887</b>	<b>51,835</b>

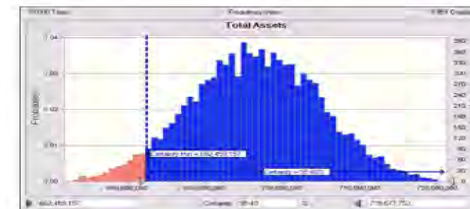


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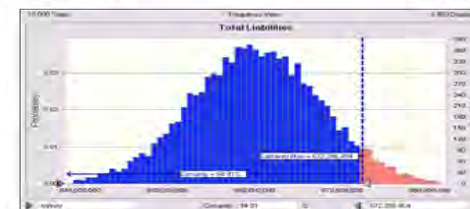
# Confidence Accounting - Banks

Balance Sheet as at T0  
in millions

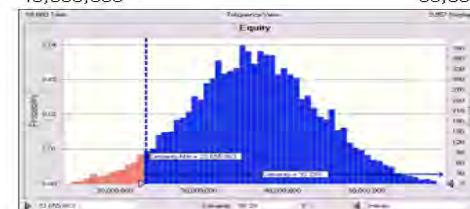
Assets		Nominal		Expected loss	Estimated value
Loans and advances - banks		50,000,000	5E-04	25,000	49,975,000
Loans and advances - corporate customers		100,000,000	0.007	700,000	99,300,000
Loans and advances - retail customers		200,000,000	0.015	3,000,000	197,000,000
Debt securities					
	Level 1 and 2	60,000,000	0.002	120,000	59,880,000
	Level 3	10,000,000	0.002	20,000	9,980,000
Derivatives					
	Level 1 and 2	150,000,000	3E-04	45,000	149,955,000
	Level 3	10,000,000	5E-04	5,000	9,995,000
Other		120,000,000			120,000,000
Total		700,000,000		3,915,000	696,085,000



Liabilities			
Deposits	350,000,000		350,000,000
Debt securities	75,000,000		75,000,000
Derivatives	150,000,000		150,000,000
Other (accruals, tax, short positions)	25,000,000		25,000,000
Subordinated debt	60,000,000		60,000,000
Total liabilities			



Equity	40,000,000	36,085,000
--------	------------	------------



Total	700,000,000	696,085,000
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## Confidence Accounting – Professional Services

Profit & Loss Account (£ '000)	
Income	2,187
Staff Costs	1,655
Other Expenditure	248
Depreciation	36
Expenditure	<u>1,939</u>
Profit	<u>248</u>







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# Trading Sardines Or Eating Sardines?







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# When Would We Know Our Commerce Is Working?

- ◆ When we're equitable - space?
- ◆ When we're sustainable - time?
- ◆ When we're happy?



## THE PRICE OF FISH

*A New Approach to Wicked Economics  
and Better Decisions*



MICHAEL MAINELLI  
AND IAN HARRIS



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# Thinking The Long Finance

## Thank you!



“Get a big picture grip on the details.”

*Chao Kli Ning*