

On linear and non-linear thinking and the consequences ...

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Please accept my apologies in advance for this being a long post. Don't be put off. This is a massively important issue.

How we think is important. It changes our perspective on the world. In this post, I suggest that the crisis we are in is the consequence of inadequate linear thinking. We need nonlinear thinking to change the world. But, will we get it when linear thinkers in government don't even understand what it is?

For the [second time in a couple of days](#), I feel it necessary to write a blog post in response to a comment that has been made here with regard to neurodivergence, but most especially, with regard to the way in which people think.

This post is made in response to an offering from the person who comments here as Pilgrim Slight Return, or PSR as he is usually known. The real identity of this person is known to me, and he is the most regular commentator this blog has ever had, with the exception of odd periods when I think he needs to take time away.

I am not going to comment in depth on what PSR had to say, nor will I try to summarise it. [You can read it here, and I suggest doing so.](#)

Instead, what I'm really interested in is ways of thinking, and what PSR's comment made me think about. I suggest that one of the things that PSR has described in his comment is the difference between people who think in a linear fashion and those who think in a non-linear fashion, which, it appears to me, he does.

I am aware that I have thought in a non-linear fashion for decades. I have always considered this to be a considerable advantage. Most certainly, when I was selling accountancy and consulting advice, it provided me with an unambiguous competitive advantage that was frequently commented upon by my clients, and was the basis for

their recommendation of my services to other people.

I could spend hours summarising what linear and non-linear thinking are, or I could ask ChatGPT to offer summaries of this, and I have opted for the second route, whilst ensuring that I agree with what is offered.

Non-linear thinking might be summarised in this way:

Linear thinking is a cognitive approach that involves progressing in a straight, sequential manner from one point to the next. It's based on logical reasoning and cause-and-effect relationships, often used to solve problems where the steps are clear and follow a predictable path.

Major Attributes of Linear Thinking:

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Sequential Process:

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Thoughts progress step-by-step, like moving through a checklist.

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Each step leads logically to the next.

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Cause-and-Effect Focus:

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Emphasis on understanding direct relationships between actions and outcomes.

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Analytical Orientation:

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Breaks down problems into smaller components for examination.

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Tends to rely on data, rules, or established procedures.

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Predictability:

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Outcomes are often anticipated because the process follows a structured pattern.

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Objective and Fact-Based:

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Prioritizes logic and factual information over emotions or intuition.

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Goal-Oriented:

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Driven by clear objectives, often with a single correct answer or path.

Benefits of Linear Thinking:

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Efficiency in Problem-Solving:

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Effective for problems that have a known solution or standard process (e.g., math, logistics).

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Clarity and Structure:

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Helps avoid confusion by organizing ideas in a straightforward manner.

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Ease of Communication:

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Ideas are presented in a logical sequence, making them easier to explain and understand.

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Reduces Ambiguity:

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Emphasizes clarity, reducing room for misinterpretation or uncertainty.

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Strong in Routine or Technical Tasks:

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Ideal for fields like engineering, accounting, or programming, where structured thinking is critical.

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Good for Planning and Execution:

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Supports project planning, timelines, and step-by-step task management.

While linear thinking is highly effective for structured tasks, it can be limited in situations that require creativity, innovation, or adaptability—where ***non-linear or lateral thinking*** may be more appropriate. Let me know if you want to compare these approaches.

I took ChatGPT up on that last offer, and this is what it had to say on what I call non-linear thinking. The two questions were posed identically, otherwise:

Non-linear thinking is a way of processing information that moves beyond traditional,

step-by-step (linear) logic. Instead of following a straight path from point A to point B, non-linear thinking involves making connections between seemingly unrelated ideas, approaching problems from multiple angles, and often jumping between concepts to generate insights or creative solutions.

Major Attributes of Non-Linear Thinking

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Holistic Perspective

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Sees the “big picture” and how parts interconnect.

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Emphasizes patterns, relationships, and systems over sequences.

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Intuition-Driven

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Relies on instinct, gut feelings, and subconscious associations.

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Often precedes logical justification.

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Associative Thinking

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Connects ideas that are not logically or obviously linked.

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Encourages metaphor, analogy, and lateral associations.

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Creative and Innovative

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Breaks traditional thought patterns.

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Tends to generate novel, unconventional ideas or solutions.

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Flexibility and Openness

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Comfortable with ambiguity and uncertainty.

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Welcomes alternative viewpoints and unusual methods.

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Multi-dimensional Problem Solving

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Tackles complex or ambiguous problems from multiple angles.

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Uses non-sequential methods to explore solutions.

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Non-Sequential Process

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Thoughts do not follow a fixed order.

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Ideas may appear out of order or spontaneously.

Benefits of Non-Linear Thinking

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Enhanced Creativity

- * Fosters out-of-the-box ideas and innovative approaches.
- * Useful in fields like design, marketing, writing, and entrepreneurship.

- * ***Effective Problem Solving***

- * Helps resolve complex or ill-defined problems that lack a clear path.
- * Encourages alternate routes when traditional methods fail.

- * ***Strategic Insight***

- * Enables strategic foresight by seeing connections others might miss.
- * Helps anticipate outcomes and think long-term.

- * ***Adaptability in Uncertainty***

- * Suits environments with rapid change or limited information.
- * Enhances resilience by allowing flexible thought shifts.

- * ***Collaboration and Empathy***

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Opens space for diverse perspectives and interdisciplinary thinking.

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Improves communication with others who think differently.

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Innovation in Business and Technology

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Drives disruptive technologies and market shifts.

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Essential for visionary leadership and future-oriented thinking.

Examples of Non-Linear Thinkers:

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Albert Einstein (theory of relativity emerged from thought experiments)

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Steve Jobs (linked design, tech, and human emotion)

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Leonardo da Vinci (blended art, science, and anatomy)

There are major differences between linear and nonlinear thinkers, in my opinion.

One of those is that linear thinkers find it exceptionally difficult to understand how non-linear thinkers can come up with their ideas, or reach their conclusions, whereas, if required to do so, non-linear thinkers can force themselves to think in a linear way because it is a process that can not only be trained, but is usually trained as the basis of most modern education.

The difference between these two ways of thinking could be explained in a book, or I can try to offer an example or two. One such example relates to how these two types of

thinkers look at data. The data could relate to anything. It could be the supposed result of an experiment. It could be a claimed fact. It could even be a stated opinion. It makes very little difference.

The linear thinker will react to data by, almost invariably, seeking evidence to support the claim made. Their working assumption will be that if something has been stated to be true by someone in a position of authority, then it probably is, and what they need to do is substantiate what they have been presented with as a fact. The process is, therefore, confirmatory, compliant and reinforcing. Most particularly, if some evidence is found to support the claimed fact, then the linear thinker will conclude that the fact is correct, without usually seeking alternative explanations.

By starting from an assumption of fact, the linear thinker is likely to end up confirming to their own satisfaction that the fact is, as they first thought, or (as importantly) as was suggested to them, true. Some supporting evidence is assumed to be sufficient. Correlation will, too often, be taken to indicate causation. Questioning is limited. Challenges to the status quo, hierarchies of power, or prevailing methods of thinking do not happen. Even the reason for the information having been presented is rarely questioned. Almost all education requires this method of working if the participant is to succeed.

In contrast, the non-linear thinker will assume that the information supplied to them is inherently subjective, conjectural, and may be wrong. They will proceed on the basis of that assumption and examine the claim made in that light, assuming nothing unless the context, above all else, supports the claim made, and even then, presuming that any conclusion reached is provisional, at best.

Understanding this point is absolutely vital. The fundamental contrast between linear and non-linear thinking is that the former assumes that initial claims are right and seeks to confirm that fact, whereas non-linear thinking presumes that a claim might be wrong. What is more, non-linear thinking presumes that finding a fact is wrong has at least as much value as proving that it is right. Knowledge has value in itself in other words, even if it proves a negative. That is not true in linear thinking, where negatives are rarely reported, which fact is, for example, the curse of medical research literature that almost invariably only reports confirmatory and not negative findings.

Linear thinking, then, assumes that knowledge exists within a system where everything is effectively already known, and the risk of error that exists only does so because of the fault of the thinker who has not, as yet, established what is actually happening.

In contrast, non-linear thinking assumes that we exist in a state of uncertainty where a great deal might be unknown, and any claim might be incorrect. As a result, establishing what might, on the balance of probabilities, be appropriate to believe is the objective of any thought non-linear process. Linear thinking does, of course, do almost the exact opposite.

Linear thinking does, of course, describe the processes implicit in the assumptions of neoliberal economics, and so neoliberal political thinking, where it is assumed that perfect knowledge exists, and the only purpose of inquiry is to check how deviations from a perfect model of behaviour might be corrected. Extraordinarily, almost everything that supposedly passes for macroeconomic research these days does, for example, conform to this pattern. The neoliberal researcher assumes that there is a risk, which they will then assume is quantifiable, and all that they need to do is work out how to eliminate that risk to achieve the previously assumed optimal outcome that the neoliberal model prescribes as desirable.

The non-linear thinker does, instead, assume that we live in a state of uncertainty. Uncertainty is, as those familiar with mathematics will know, fundamentally different from risk. A probability can be assigned to risk because all known possibilities have been identified, and the only question left to answer is which of the available possibilities might actually happen. In contrast, uncertainty presumes that not only do we do not know all the outcomes of actions, but that some of them might be unknowable, and that, in addition, we do not have all the information that we need to appraise the unknown range of options that are available to us, and despite that fact we have to still make decisions, accepting the possibility that we might be wrong.

It has always been my opinion that risk appraisal of the type used by linear thinkers can rarely, if ever, be of use in any human decision-making process. Except in the most trifling of cases, we do not know all the options that are available to us. Nor, even if we do, can we be sure of the probabilities to attach to each outcome. Therefore, decisions almost invariably take place in conditions of uncertainty.

What this means is that linear thinking is almost invariably unsuited to any major decision-making process, precisely because the assumptions inherent within it cannot match the needs that the human condition presents. Only non-linear decision-making processes are, in fact, of use for such decisions.

The unfortunate fact is that not only are our politicians apparently only trained in linear thinking processes, but most of them are unaware of non-linear thinking, and, even more importantly, are quite unable to do it.

What can be concluded, before this post becomes even longer than it already is?

The first thing to say is that precisely because non-linear thinking is so alien to the understanding of the linear thinker, they seek to reject it. They do so by, for example, denying the possibility that it exists or by refusing to accept that it can lead to useful decision outcomes. Alternatively, they suggest that it is irrational and that, as a consequence, it must not be relied upon. All these claims have, of course, been made by neoliberal economists who rely almost solely upon mathematical model-making to undertake their work, even though the assumptions that underpin those models bear no relationship with reality.

The linear thinker will also, perversely, always make an appeal to emotion when addressing this issue, by demanding that emotion should be taken out of any process. They will claim that we should “stick to the facts”. The fact that there are, in most situations, no facts, but there are instead only opinions about which interpretations might differ, is inconsequential to them. They will, quite perversely, appeal to emotion to imply that they are higher-order beings, when in practice their thinking processes are deficient by failing to recognise that higher-order thinking necessarily requires the recognition of uncertainty, rather than risk.

The consequence is that simple goals are prioritised, rather than complex ones. Mathematical models prefer simplicity: the maths gets hard when anything else is dealt with. In addition, when looking at the human condition, the maths becomes impossible, because not only can the variables under consideration not be defined, but the number of variables to consider is itself unknown, as is the data that might relate to each of them.

There is another consequence. That is that when emotion is eliminated from decision-making and supposed rationality is substituted, those things that can be measured are prioritised. In our society, the consequence has been that everything that relates to the accumulation of wealth, expressed in monetary form, is given preference over anything else. Most especially, anything related to empathic concern is taken out of consideration because value cannot be attributed to it.

It is all too easy to see how our politics has been degraded as a consequence. If decision-making processes are as deficient as I suggest, it is inevitable that the decisions made by those using them will not meet the needs of our society. The consequence that we now see all around us is that a great many people are responding by rejecting the politics that has promoted this form of decision-making.

One of the paradoxes of this is that those who have promoted the decision-making that has now been rejected are probably the least well-equipped in our society to understand the rejection that they are suffering. They can only look on with bafflement as their supposed rationality is rejected by those who can see the consequences of the failure that it has promoted in their own lives, and of those around them. This fact explains the almost total bewilderment of Labour and other neoliberal political parties in the face of the far-right onslaught that is now challenging them.

My suggestion is that unless and until priority is given to non-linear thinking within our national and political decision-making processes, we cannot find a solution to the problems that we face. Creating another spreadsheet, or balancing another budget, or accumulating yet more wealth, might appear to be rational, but it has never solved a problem, and never will now that the harm that these goals have created is readily apparent.

It is only by embracing the subjectivity of non-linear thinking, which permits the

injection of ethically based bias into decision-making processes to ensure that outcomes suit the requirements of those most in need, that we will now find solutions to the problems that we, as a society, face. I do not, however, presume that this will be easy. Our existing decision makers cannot comprehend what is now required of them, and that, in a nutshell, is a precise definition of our national crisis.