

## Preface (v1.2)

For the first half of my career as a physician, I had a rather narrow view of the world, but it came with the job. As a gastroenterologist, my workplace - the human gut, was only a few centimetres across, and like any other sort of medical specialist, I worked in a narrow but deep pool of knowledge, skills, and experience, - a pool constantly fed by the fast-flowing stream of advances in biomedical science and endoscopic technology. Any interesting bits of information that floated downstream were fished out and stored in a computer database. Memorable examples from those years include the discoveries of how a bacterium hiding in plain sight pushed acid off centre stage as the cause of stomach ulcers, and of how seemingly minor changes in the choreography of the base pairs of DNA could turn colon cells into dancing dervishes of malignancy. In those days the database served as sort of *vade mecum*, a storehouse of the key bits of information of the type needed by all specialist physicians in their daily work as well as for research and teaching.

In the second half however, the field of view widened out considerably after I moved into health service and medical school executive management and leadership. Some parts of this new landscape of learning were predictable: - the tools and techniques of financial and human resource management, the earnest nurture versus nature debates about the origins of leadership, and the dreamscapes of strategic planning. These new ideas, garnered mostly from the business sections of airport bookshops, were added to the collection. What I had not predicted were many puzzling questions with no immediately obvious answers, including for example:

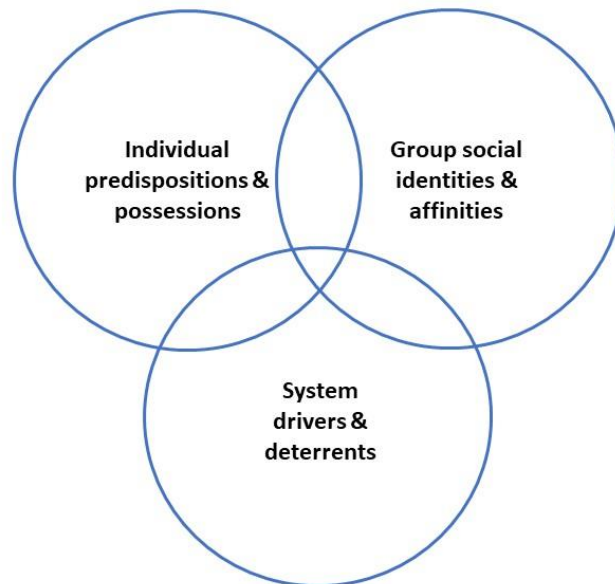
- Why is there so much *unjustified* variation? – in other words, why is it that some groups and organisations in different places deliver the same services for the same clinical conditions so much more and effectively, and/or efficiently, safely, and happily than others?
- Why, in an industry so concerned about clinical outcomes and costs is *value* as measured by clinical outcomes per unit cost so rarely used as a key performance indicator?
- Why do health service managers and healthcare professionals, especially doctors, so often seem to find it so difficult to effectively manage their rogue colleagues – low in number but high in toxicity?

Here airport bookshops were no help, nor seasoned health service and academic managers who just responded with rueful grins of recognition and sympathy but not much in the way of practical advice.

Nevertheless, I gradually discovered that there *were* answers to these questions, but not in the literature encountered in the education of most medical students and postgraduates, nor in standard management textbooks. The information was out there but scattered across many disparate disciplines: - organisational and social psychology, behavioural economics, nonlinear mathematics, and system dynamics to name but a few. The database rapidly expanded and changed radically in content as I sailed out of the safe and familiar harbour of specialist medicine to academic foreign lands where the scenery was very different, and they spoke very different languages.

From time to time the thought occurred that some sort of review or anthology of what I had learned on my travels might be useful for others embarking on similar journeys, a sort of Lonely Planet travel guide for novice clinician-managers. The problem however was, and still is, that much of the most useful information lies fragmented and often overlooked in the borderlands of many different scientific specialities. This mainly reflects the wants and needs of specialists/researchers to 'stay in their lanes' – not only because this is where they feel most at home, but because they need to conserve their energies for the academic survival of the fittest. Interdisciplinary enterprises are grand in theory but often get abandoned at the first whiff of competing intradisciplinary priorities.

It was clear therefore that some sort of conceptual framework was needed wherein all these disparate ideas could be grouped together, integrated, and better understood. For this purpose, it seemed that a simple Venn diagram linking the three domains of the sciences of individuals, the groups, and global systems would be a good starting point:



The overlap zones in such Venn diagrams are conventionally used to demarcate ‘is part of’ logical relationships, but their roles here have been extended to include ‘interacts with, influences, or controls.’

In this scheme of things, the traffic of ideas, actions and consequences can flow in any direction, and interact in any area of overlap, but the most useful starting point for understanding the mechanics of the process, is the set of *individual predispositions and possessions* either inherited or acquired that are the primary causes of how we all think and behave. Possessions in this context can either be material resources or abilities.

Similar individual attributes are then aggregated as *social identities and affinities*. These may be inescapable or optional and include gender, families, racial or ethnic origins, neighbourhoods, sports teams, occupations, religions, or political parties. They are mostly beneficial and often essential for both group members and society at large, unless they are the breeding ground for hostile polarisation, or serve as the organs of organised crime, terrorism, or other less dramatic forms of anti-social behaviour.

The manifestations of these local predispositions and identities are in turn determined by global *system drivers and deterrents*. The drivers include various material and social rewards and the megaphones of social media. The deterrents include the constraints and punishments of legal, government, and religious authorities.

There is no claim of originality for this concept. Indeed, its main attraction – at least to physicians, is that it closely mirrors their ways of thinking. This is because accurate diagnosis and appropriate treatment also require knowledge, experience, and expertise in the same three domains: - of the biology, predispositions and needs of the individual patient; of the strengths and weaknesses of their families and other local groups of which they are members; and of the opportunities and constraints of the wider global community in which they live.

This well-honed medical model is informed by an extensive, well-validated and educationally well-organised collection of core information from the basic and applied biomedical sciences which is taught to all medical students. Newly qualified doctors can then quickly build upon and refine this knowledge through their clinical practice and their growing experiences of the complex circumstances and environments inhabited by their patients.

Unfortunately, no similarly organised or easily accessible collection of the most relevant and important information exists for the novice clinician-manager that usefully links the three domains of healthcare organisational physiology and pathology. This site is offered as an embryonic form of what such a resource might look like or become.

From the several thousand literature references that might have been used for this purpose, only just over a hundred have been included. This has been made possible by using one or more of three key selection criteria:

- They have proven personally useful as a way of organising information, thoughts, and actions in various executive / managerial appointments but in two especially. The first was as head of a state health service clinical practice improvement unit, and the second as head of a state statutory authority with responsibilities for investigating failures in the quality and safety of health care in hospitals. In the former, individual, group, and systemic factors could often be seen to combine in different quantities and qualities to generate patient outcomes that ranged from suboptimal to exemplary. In the latter, the same basic trio of factors combined in various ways to result in poor clinical and / or social and organisational outcomes, with misadventure at one end of the spectrum of causality and misbehaviour at the other.
- They seem likely to have been overlooked in the education of most health service and academic managers whether clinically qualified or not. A citation count is included in the database table to give some indication of the type and scale of any such possible neglect, with counts ranging from single digits to tens of thousands. The very high counts are generally for sources outside the mainstream biomedical literature and that may thus not have been on the regular reading list of healthcare professionals; the low counts are mostly from sources in the biomedical literature that seem to me to be worthy of wider exposure and appreciation – opinions that are admittedly but unashamedly idiosyncratic and eclectic.
- They illustrate and exploit the main attraction of any Venn diagram, and especially the one of current interest – the redirection of attention and imagination away from isolated issues at the periphery and towards the central area of overlap of the three main domains where the most interesting interactions are often to be found.

These interactions are also important because they are the sources of [complex adaptive systems](#) that are not easily understood or measured or managed within conventional hierarchical organisational structures.

Such systems arise wherever large numbers of humans with diverse and/or conflicting wants and needs must be managed but are especially troublesome in healthcare because of the rapid increase in such interactions due to the rapid growth in the number of diagnostic and therapeutic entities and options in modern healthcare. This has led to an explosion in the number of specialties of progressively increasing depth, but decreasing breadth, of attention, experience, and expertise.

The first step in managing complex adaptive systems is to collect, group and interconnect all the key information from diverse sources needed for better understanding and appropriate action. This need is accommodated in a rudimentary form in the database table of this site. This allows ideas and possibilities to be easily arrayed and grouped by domains and sub-domains and searched for like entities both expected and unexpected. It is far from a complete answer to the problems of managing, and/or being part of, an organisational complex adaptive system, but it is a start and a foundation that can easily be expanded or further refined and developed.

The same information can however often be more lucidly and meaningfully presented as commentaries or narratives rather than in datasets however well stocked or carefully classified these may be. This preface is one such narrative and will be followed by others addressing the three questions above.

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**28/07/2024**