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# Tourism Systems

## Introduction

Tourism is about moving between physical places using a web of transport links. That web incorporates more than just transport and the people using the transport and providing the transport, however. As we saw in Chapter 1 using the example of chocolate, supply chains weave their way globally through diverse natural environments, across oceans in container ships, through the air as cargo and passenger flights, and through all sorts of communities, with all sorts of diverse needs. It was this spider web of connections connected goods and people around the world that was brought into sharp relief with the rapid spread of Covid-19 starting late 2019/early 2020, and the stay-at-home orders that followed.

Thinking about tourism systems allows us to think about pairs of interactions – a new marketing campaign by a destination management organisation paired with increase, or change, in visitor numbers, for example – as well as whole series of pairs – a new marketing campaign -> increase in visitor numbers -> increase in revenue for tourism providers -> more jobs -> more taxes -> more funds for marketing campaigns. What you will notice is that we have looped back round to our starting point of marketing. This is one of the most fundamental aspects of systems thinking, loops or feedback loops to be more exact. In addition to a simple loop like this one, such an approach will identify spin-off loops that might create unexpected outcomes (say, increase in visitor numbers -> traffic congestion -> lowered wellbeing -> declining destination appeal -> decrease in visitor numbers), as well as loops that might merge and interact in ways that can create surprising results.

This chapter will cover what systems thinking is, how it requires a different way of seeing the world (our ontology) and how that ontology relates to sustainability more generally. Meadows, one of the key researchers in systems thinking, tells us that *“the systems-thinking lens allows us to reclaim our intuition about whole systems and hone our ability to understand parts, see interconnections, ask ‘what-if’ questions about possible future behaviours and be creative and courageous about system design”* (2009, p.6-7).

In this chapter, the different characteristics of systems thinking, e.g. emergent properties, will be explained, along with the vocabulary used to talk about systems. We’ll explore what we mean by tourism systems and look at ways we

can intervene in a system to change, or in this case, move it towards greater sustainability, as well as what we mean by system archetypes and how knowing these can help us better navigate systems. These types of interventions will be further explored in Chapter 8, as well as in Chapter 11 which covers some of the deeper places to intervene in a system for real change.

### Key words and concepts

- Systems thinking
- Linear and non-linear
- Complexity
- Feedback loops
- Cause and effect
- Perturbations
- Strange attractors

## 2.1 Loopy thinking

For most of the time that humans have been around we have thought about systems. It is not something new, although it was perhaps lost and then re-discovered in the West more recently, when computers could be used to model the outcomes of many pairwise interactions of variables. The power of computers has allowed us to overlay scientific principles on to old complex ways of thinking. (If you have ever listened to old parables, myths, stories and yarns and thought “I have completely lost the thread of who is who and what they are doing and why” you’ll know what I mean by old, complex ways of thinking.)

When we talk about systems thinking, non-linearity (loopiness) and complexity, it is important to recognise we are using these terms to contrast with linear thinking. The latter arguably emerged from the Age of Enlightenment during the 18<sup>th</sup> century, and the Cartesian “I think, therefore I am”. Thinking is often best done in chunks, and in fact, ‘chunking’ is a popular technique for memorising and learning, more. It’s arguably also another term for reductionism: this is ‘in’ (the chunk) and that is ‘out’ (of the chunk), which leads to separation and the type of dualism that views humans as living separately from all that surrounds us. Linear thinking describes cause and effect relationships: one cause -> one effect. The relationship is predictable and repeatable each time, and very useful for mechanics based on Newtonian physics and industrialisation. Interestingly it seems to be becoming increasingly evident that these relationships are the exception rather than the rule.

Instead, we are surrounded by complex, non-linear systems. These are characterised by having several bodies or elements that are interacting, often in ways where cause and effect is not clearly visible, and instead where complex feedback loops determine the future trajectory of a system. To describe complex systems, Sterman (2010) described seven characteristics that they share:

- Non-linear
- Dynamic