

## Exercise 5

### **What is complex contagion and how it's different from simple contagion?**

A "Simple Contagion" describes the process by which an individual exposure to a single node (person or even a "thing" such as an advertisement) causes transmission of the contagion from one person (or thing) to the next. It is also important to note that the "contagion" doesn't necessarily mean it is a virus being transmitted, it could also be information, behaviours or beliefs, which could be positive or negative.

In complex contagion, the transmission isn't based on solely coming in contact with the contagion, it is based on the relative percentage of "infected" individuals in your immediate network. If this percentage exceeds the threshold you have to be susceptible to transmission, you will be "infected". In this definition, a simple contagion could also be considered a complex contagion with a threshold of 0%. Due to the fact that it is based on the relative threshold of individuals in the immediate network of the node, adding more connections doesn't necessarily mean that the contagion will spread better. Careful thought should be put into the connections between nodes and the starting point(s) of the contagion to better understand how it will spread throughout the network, and which individuals will be susceptible or "immune" (impeded from exceeding their threshold).

### **What does complex contagion mean for diffusion of behaviours in organisation?**

When considering the role of complex contagion on the diffusion of behaviours in an organisation, the ultimate goal should be to achieve what's called a "Small World Network". This is achieved when there is an optimum level of "bonding" and "bridging" in the network. Bonding (also termed bonding social capital) is the number of connections within a group, whereas bridging (also called bridging social capital) is the number of connections between groups. It is crucial to find the optimum mix of these metrics for several reasons. First, having excessively high levels of bonding social capital with no bridging social capital can result in groupthink, where a group of people end up making non-optimal decisions either due to an urge to conform, or, that alternative decisions are impossible/infeasible. Conversely, having too few connections can make it difficult for complex ideas to spread, making it crucial to find the right balance. From an organisational perspective, the structure of the communication/contact network should be carefully considered and optimised, to ensure that there is enough diversity of groups to spawn new ideas, and enough connections to help these ideas spread. In this way, organisations can help ensure that the best decisions are being made.

### **How can we use the threshold models to better manage: Prosocial behaviour in organisations, Learning, and Toxic or unproductive behaviours**

Considering the threshold models, it may be useful for an organisation to find a way to estimate the thresholds that each individual (or group of individuals) within an organisation has for different circumstances. It is highly likely that the threshold for transmitting behaviours is different than the threshold for transmitting information. Similarly, it is highly likely that thresholds will be different for transmitting toxic behaviours compared with altruistic behaviours. Better understanding these thresholds in the context of the overarching organisational structure may better help the organisation reinforce their structure to ensure that positive behaviours flow more freely, and negative behaviours find more resistance.