

# DATA5441 - NETWORKS AND HIGH-DIMENSIONAL INFERENCE

## INFLUENTIALS

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## 1. INTRODUCTION

**1.1. The Influentials Hypothesis.** **Influentials** are a minority of individuals who influence an exceptional number of their peers.

The **hypothesis** was that influentials were mediators between the source of innovation and the majority of society. The model, called the **two-step flow** of communication.

**1.2. Questions of Interest.**

- What does the two-step model say about influentials?
- How do influentials exert influence over the larger population?
- Are influentials responsible for the spread/diffusion of innovation?

**1.3. General Results.**

- Under certain (rare) conditions, influentials appear responsible for initiating cascades of influence and are important.
- Under most conditions, most cascades are driven by easily influenced individuals influencing other easily influenced individuals.
- Model: Two-way influence model with influentials acting as a middle-man.
- Simulations suggest that under certain conditions, influentials promote cascading effects but these conditions are rare.
- Computer simulation models

Simulations

Threshold Model

- Each individual  $i$  in a population of  $N$  influence  $n_i$  random individuals.
- Early adopters are individuals who adopt an innovation when a single neighbour has innovated.