

Comparing the Decay of Physical and Digital Inoculation Against Disinformation

Introduction

Since entering the post-truth digital age, awareness in false information spreading online has increased rapidly. Despite this increased awareness it remains a serious problem, with Russian and Chinese state disinformation campaigns proving effective on online social networks (OSNs), impacting the wider UK political landscape. There are many areas of intervention across the mis- and disinformation landscape, including machine learning detection and classification methods, bad actor research, and some cognitive approaches.

A Cognitive Approach: Inoculation Theory

Inoculation theory follows the biological analogy: to increase resistance to persuasion the subject should be pre-exposed to a weakened version of a persuasive argument (See Fig. 1). Researchers have used inoculation theory in both physical and digital interventions, with participants yielding positive results identifying false information, and resisting “fake news.” [3]. Despite this, only a limited amount of longitudinal data exists [2].

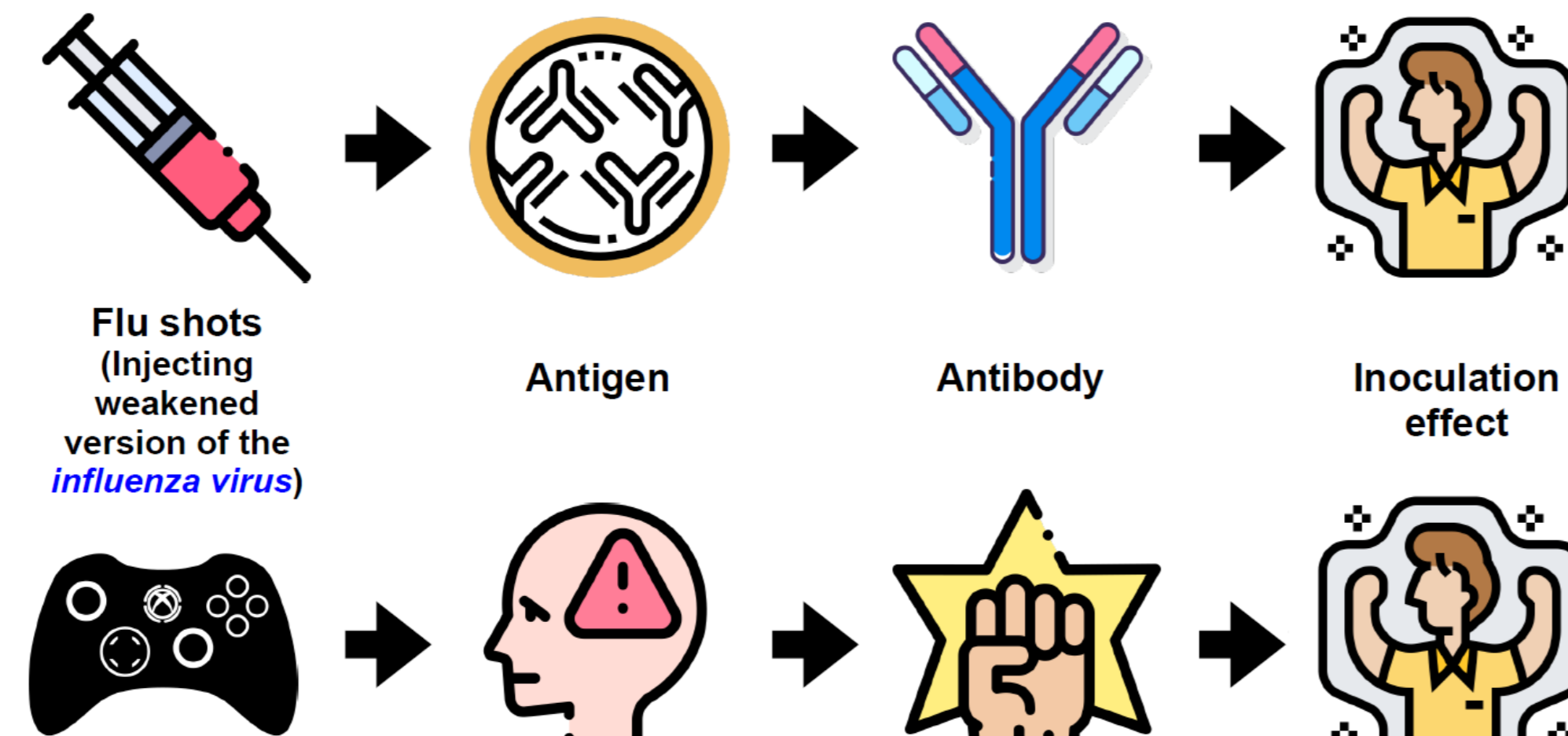


Figure 1: Biological and information inoculation [0]

Goal

This research focuses on understanding how the decay of inoculating effects differs relative to whether the inoculation intervention was delivered digitally or physically. Participants are inoculated to build resistance to disinformation using a board game, and results are compared to the inoculation decay of other, digital disinformation games.

References

- [0] Jeon, Y., Kim, B., Xiong, A., Lee, D., & Han, K. (2021). ChamberBreaker: Mitigating the Echo Chamber Effect and Supporting Information Hygiene through a Gamified Inoculation System.
- [1] Roozenbeek, J., & van der Linden, S. (2019). The fake news game: actively inoculating against the risk of misinformation.
- [2] Ivanov, B., Parker, K. A., & Dillingham, L. L. (2018). Testing the Limits of Inoculation-Generated Resistance.
- [3] Roozenbeek, J., & van der Linden, S. (2020). Breaking Harmony Square: A game that “inoculates” against political misinformation.

The “Fake News” Board Game

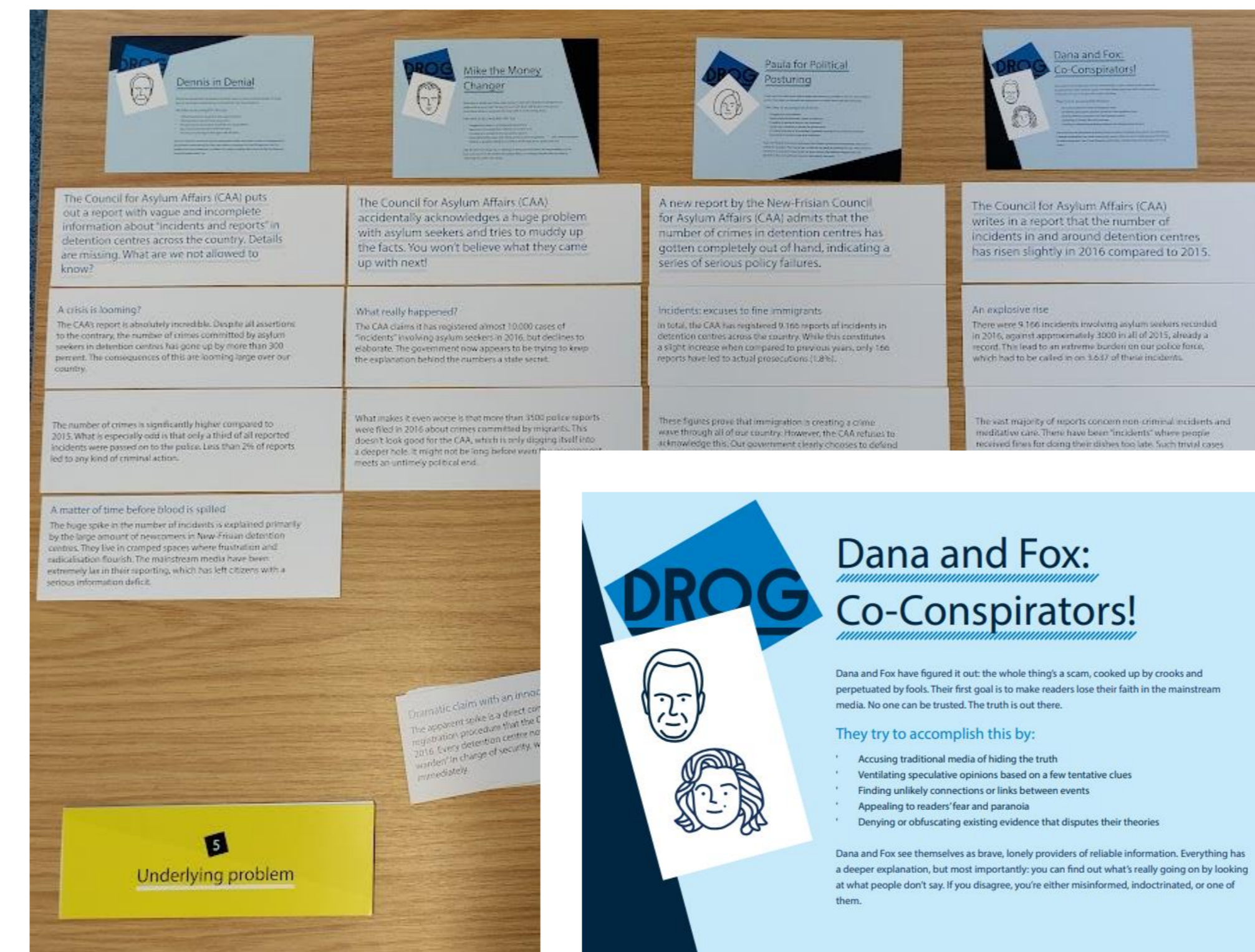


Figure 2: The “Fake news game” [1]: a physical inoculation-based game to counter online disinformation.

Originally created in a collaboration between the DROG, Jon Roozenbeek and Sander van der Linden [1], the “Fake News” game is a collaborative board game for 4 players that educates players in creating “fake news” articles. Players work together to create misinforming articles from templates on a topic, in the style of 4 different characters. Each character has different motivations and methods for influencing public opinion.

Method

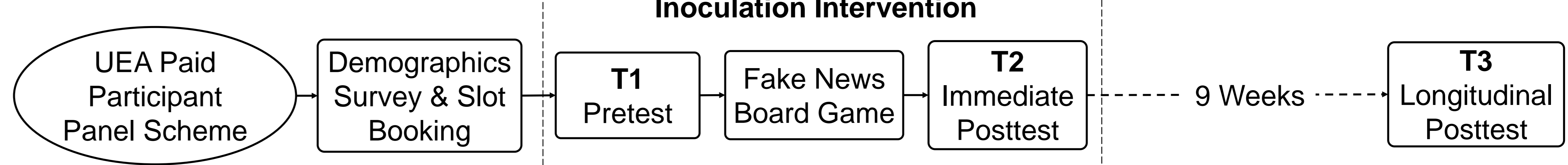


Figure 3: Experiment flowchart for the longitudinal study.

Starting each inoculation session, participants take a pretest to measure initial resilience to false information. In groups of 4, participants then play the “Fake News” board game (See Fig. 2). The inoculation session ends with an immediate posttest. After 9 weeks, participants are emailed a final, longitudinal posttest. This testing methodology follows that of previous work looking at longitudinal effects of a digital “fake news” game. Results will be compared to enable a shallow comparison between digital and physical inoculation approaches.

The pretest, immediate posttest, and longitudinal posttest scores are measured by participants scoring the persuasiveness and reliability of 4 fake news articles. The articles use a number of similar disinformation literary techniques from authority, and whataboutism.

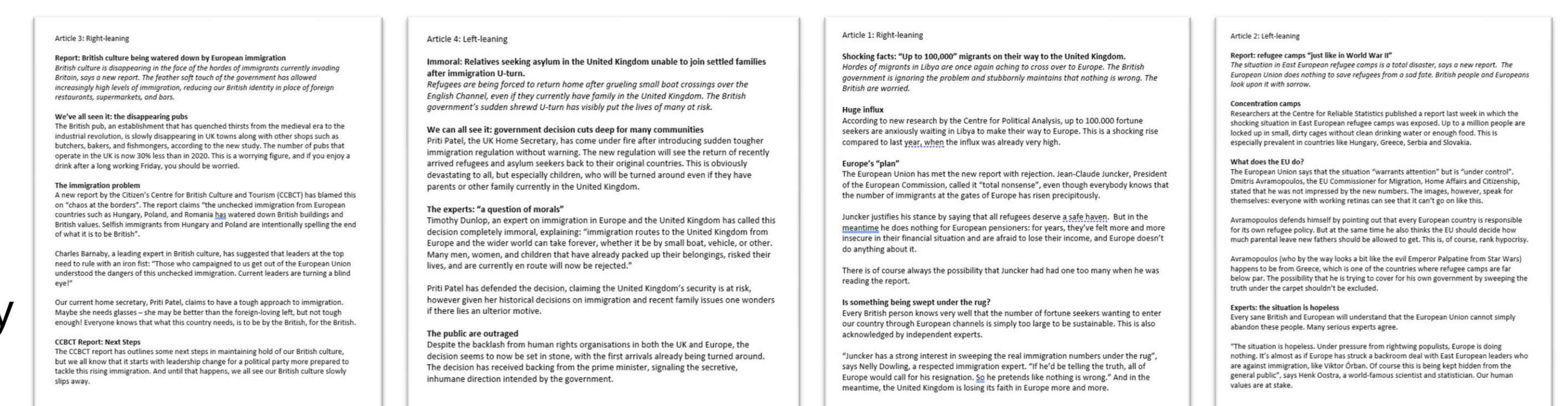


Figure 4: Articles used in the experiment testing. Two articles take a politically left-leaning position, and two articles take a politically right-leaning position.

