

A photograph of a sunset or sunrise over a city skyline. The sun is low on the horizon, casting a warm, golden glow across the sky and the city buildings. In the foreground, a person's hand is raised, reaching towards the sun. The person's head and shoulders are visible in silhouette against the bright light. The overall scene is atmospheric and evocative, suggesting a connection between nature and urban life.

### REAL TIME ATTRIBUTION

On March 8th 2017 a New York Times article reported that spring had come early and that “Scientists Say Climate Change Is a Culprit.”<sup>1</sup> Using temperature data collected in the preceding month, it was concluded that across the United States, spring weather had arrived more than three weeks earlier than usual in some places.”<sup>2</sup> Even what may under other situations be characterised as weather trends – like a season coming early – can be thought of as an extreme event, with massive impacts on plants, animals and ecological systems, agriculture to crop yields.

Reporting on data from February in the first week of March is exemplary of a new trend in the of attribution relationship between weather and climate. For climate change communication it has become extremely important to put a number on specific extremes or climate anomalies. “Given that public awareness for an extreme weather event is limited to a short period after the event occurring”<sup>3</sup> In the past such attribution studies were issued with a delay but this is diminishing. This in part because of computing power but most importantly because more research emphasis and greater resources are being placed on this relatively recent discipline of attribution.<sup>4</sup> The creation of real-time attribution of climate extremes is foreseeable in the near future. FAR (fraction of attributable risk) can now be assigned to every occurring extreme of certain magnitude. Further, it is hypothetically conceivable that values can be used to convert deaths and damages to emissions in order to prosecute polluters. Attribution thereby has the ability to make climate change less distant in space and time. Climate change can now be understood as occurring and affecting our present, in a quantifiable way.

1. Jeremy White and Henry Fountain, ‘Spring Came Early. Scientists Say Climate Change Is a Culprit’ *The New York Times*, 8 March 2017.

2. Ibid

3. K. Haustein, F. E. L. Otto, P. Uhe, N. Schaller, M. R. Allen, L. Hermanson, N. Christidis, P. McLean and H. Cullen, ‘Real-time extreme weather event attribution with forecast seasonal SSTs’ *Environmental Research Letters*, 11: 6, 2016.