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Fire Cube: Understanding and Communicating the Multidimensionality of Fire

Yadav Kapil

Kings College London/ Leverhulme Center for Wildfires

Abstract

Understanding and communicating the causes and effects of fire requires a consideration of the multidimensionality of fire: whether it is intentional or not, intensity and frequency (more broadly, fire regime), its effects on ecosystems and humans, and how these effects vary in the short-term versus long-term. When any dimension of fire is missed, an incomplete picture of fire arises; framing of fire in media and policy remains simplistic and often scientifically incorrect. This study develops 'fire cube' as a framework to understand and communicate the multidimensionality of fire. The fire cube framework is developed by drawing on three other frameworks – Pyric Phase Model (Pyne, 2001; Bowman et al., 2011), Three-Coloured World (Bond, 2005, 2019), and Fire Disturbance Continuum Framework (Jain, 2004). Fire is framed along four axes in the fire-cube: Pyric Phase, World, effects, and temporal phase. The Pyric Phase Model not only allows to distinguish between different fire-uses, but also elucidates upon the values and worldviews behind those fire-use practices. The Three-Coloured World framework explains the landscape in which fire incidents occur and distinguishes between fire incidents based on the landscapes they burn. The effects of fire are analysed in three broad categories: people (such as pollution, damage to property), biodiversity, and climate change. The temporal phase draws on the Fire Disturbance Continuum framework to analyse effects in relation to the time of fire: active fire, post-fire, and long-term perspective that looks at second-order fire effects. The fire cube allows evaluation and critique of existing knowledge, policy, and practices of fire management by seeing them through the lens of emergent fire ecology concepts developed in the last one to two decades. It can be used to analyse how dominant discourse and narratives frame fire along multiple dimensions. What becomes particularly important is the absence of some dimensions in the framing of fire. The absence of dimensions as well as incorrect understanding of certain dimensions can be used to reveal the politics of fire management. In doing so, fire cube offers a novel way to challenge the dominant discourses and narratives by exposing the gaps and inaccuracies in the framing of fire.

Keywords: wildfires, fire management, media, framing, environmental politics

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