

Turbulence

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The term ‘turbulence’ has entered the humanities via different routes. It derives from the Latin word for a crowd (*turba*) or uncontrolled movements of people when it can mean a mob. It lies at the heart of a semantic field linking terms such as ‘dis-turbance’ and ‘per-turbation’ which can reference external disruption and interruption (→ **Interruptions**) on the one hand, and an internal state of agitation on the other. From there scientists adapted it as way of describing the movement of fluids, particularly waves, and air currents. The defining feature of turbulence in fluid mechanics was that ‘the motion at any point influences the motion at other distant points’.¹ Despite its adoption in science, engineering and meteorology, the term is often applied in both its nominal and adjectival forms to human subjects but remains in this context somewhat untheorized. Its contours and especially relevance for globalisation research can be assembled by viewing the different applications of the term. In this article, I shall focus on those uses which pertain directly or potentially to globalisation.² Its application to a dis:connective approach to globalisation lies in the special quality of turbulence to produce ripple effects which require connection to generate energy whose effects, however, produce disruption of these very same points of contact.

Turbulence and world politics

Writing on the eve of the so-called new era of globalisation, political scientist James Rosenau (1990) proposed a comprehensive theory of turbulence in the field of world politics. In Rosenau’s understanding, turbulence refers to a situation of intensified, accelerated change. It describes more than the day-to-day fluctuations of political and economic life but rather ‘parametric change’: ‘Only when the basic parameters of world politics, those boundary constraints that shape and confine the fluctuations of its variables, are engulfed by high complexity and high dynamism is turbulence considered to have set in’ (1990, 10). These parameters are operative at a global, national and subnational level and comprise in each case structural, relational and orientational functions. For example, the ‘greater complexity of the structural parameter has come about through the replacement of the state system with a dual

1 “turbulent, adj.”. OED Online. March 2023. Oxford University Press. [https://www.oed-com.emedi-
en.ub.uni-muenchen.de/view/Entry/207572](https://www.oed-com.emedi-
en.ub.uni-muenchen.de/view/Entry/207572) (accessed March 16, 2023).

2 I will exclude for this reason the ‘turbulence theory’ proposed by Steven Gross to account for disruptions and transformation in institutional management in the educational sphere (2019).

system in which a multi-centric world coexists with the state-centric world' (100). The *structural* increase in complexity is a key factor that generates turbulence as actors in world politics – states, corporations, ethnic groups, NGOs – are required to continuously toggle between a multi-centric and state-centric orientation. At a *relational* level, a fragmentation of power and authority which were predicated mainly on military power and traditional elites has led again to an increase in complexity when negotiating these relationships. The *orientational* level refers to the involvement of citizens in political affairs. Due mainly to improved education, this intensified involvement has seen a rapid increase and accompanying diffusion of 'cathectic' energy so that individuals are less passive and less focused on national goals and may instead be engaged in different issue-driven ways: 'it may well be that the greater complexity and dynamism of individuals constitute the single most important source of the turbulence that marks our time' (1990, 103). Examples given are the anti-Vietnam war protests, opposition to and the disinvestment campaign directed at Apartheid South Africa, and the success of Solidarity in Poland.

Underpinning Rosenau's descriptive model with its three parameters is a historical explanation revolving around postindustrial society with rapid developments in agriculture, communication (→ **Communication Technologies**), microelectronics and genetics. Together these innovations have led to an increase in interactivity and interdependence. These constitute, however, a double-edged sword, creating boons and banes for the world: 'Increased interdependence can lead to the spread of misery or to the sharing of artistic experiences, to the intensification of prejudice or to the integration of perspectives' (1990, 105). Writing at the end of the Cold War, Rosenau's examples are historical, even dated, yet, one could argue, their paradigmatic explanatory force remains valid, if we substitute AIDS with Covid, atmospheric pollution with climate change, and home-made videotapes with Facebook as a means of publicizing and spreading protest.³ Other factors such as the drug trade, 'Third World' debt, unbalanced exchange rates, and terrorism remain largely unchanged. More recent examples of *orientational* turbulence as theorized by Rosenau would include the Occupy Wall Street movements that emerged in the wake of the financial crisis of 2008 as well as the Arab Spring uprisings of 2010–11. According to Rosenau's model, we are still living in an age of turbulence, in fact the factors he identifies and their complex interaction have even intensified. Today we would need to factor in the algorithmic multiplication of conspiracy theories and

3 Rosenau references a 1987 article by Jim Mann: "Tape Recording: The Modern Medium of Dis-sent," *Los Angeles Times*, January 11, 1987, sec. 5, p. 2. He also notes that the Chinese government used the same television technologies to surveil the protestors and control the representation of their massacres at Tiananmen Square. (105).

fake news on social media to describe the kinds of turbulence that are currently convulsing politics, especially in liberal democracies.

Early modern uprisings and contemporary polycrises

More recently, two historians, Lyndal Roper and Patricia Clavin, one working in the early modern, the other the modern, period, have both suggested, almost simultaneously, the term ‘turbulence’ to describe the polycrises of the present as well as major ‘global’ disturbances of the past. In her project on the German Peasants’ War of the early 16th century, Lyndal Roper uses the term ‘turbulence’, not just as a translation of the German *Aufbruch*, the emic word of the time, but as a way of understanding the spiralling waves of unrest that, in terms of specific uprisings was highly localized, but in their ripple-like effects extended as far as Northern Italy in the South and Alsace in the West.⁴ Roper asks whether one can learn from concepts of turbulence familiar in the natural sciences (fluid mechanics, meteorology, aeronautics) to better grasp the extreme ructions that marked the uprisings against the established order.

The definition from fluid mechanics cited above – the motion at any point influences the motion at other distant points – corresponds to Roper’s attempt to understand the European-wide impact of peasant uprisings in central Germany. Roper studies how individuals and groups scarcely moved outside a twenty-kilometre radius (she retraced their movements by bicycle), yet their actions had effects well beyond their immediate surroundings: ‘The greatest convulsion in western Europe before the French Revolution’ (Roper 2021: 52). Roper argues for the importance of human emotions to understand the motivations behind the peasants’ willingness to join the uprising. Yet the idea of emotional contagion, convincing though it is on the local level where groups could interact face to face, does not explain why the uprising spread so far. The diffusion of pamphlets and other texts clearly played a central role, and so did anger, on both sides of the conflict, as Roper demonstrates. However, the rapid spread of the uprising clearly followed other laws that are still little understood.

Patricia Clavin, an historian of international and transnational history, applies the term in the context of the current ‘shocks’ that seem to be proliferating. Writing for the magazine *Finance and Development*, published by the International Monetary Fund, Clavin argues that turbulence can be seen as a series of interconnected disturbances or shocks:

⁴ Roper, Lyndal. 2022. “The German Peasants’ War of 1524-6: Turbulence.” Symposium for Alexander von Humboldt Research Award Winners, Bamberg, 14 October. See also <https://www.leverhulme.ac.uk/major-research-fellowships/german-peasants-war>.

It is better to anticipate the problem before us as one of managing turbulence rather than to see each shock as separate. This encourages us to avoid the dichotomy between stability and change, to confront their different chronologies, and to recognize the relationship between different types of shocks. (Clavin 2022)

‘Turbulence’ is not just a synonym for ‘shock’ nor is it specific to our own times but in its iterative force ‘can push individuals, institutions, and states to their limits.’ Drawing on the lessons of 20th-century history Clavin sees also the transformative power of turbulence in the fact that ‘it simultaneously fosters creative, pluralistic, and dynamic advocacy that leads to new modes of cooperation, often in history’s darkest hours.’ (Clavin 2022)

Today we speak of financial shock waves and turbulence in the financial markets, which can be explained by the ‘interconnectedness’ of digital connectivity. However, financial crises of the nineteenth and early twentieth century were affected by the dynamics that seemed to follow also emotional prerogatives, mainly fear. Bank runs are motivated by fear and can create a contagion that spreads faster than a Corona virus. But the violence and anger that it generates have a similar potential to create turbulence that spreads independent of advanced digital technology.

Turbulence and Covid-19

The Covid-19 pandemic is an example of turbulence in several senses of the term. First, like any pandemic it is an infection that spreads rapidly from person to person and in this sense quite literally embodies viral contagion. The turbulence engendered by the virus played out at different levels as countries closed borders and leaders imitated one another in the range of protective measures they employed. The mimetic quality of the largely similar responses set in motion a rapid ripple-like effect as countries implemented lockdowns one after another. This turbulence demonstrated the highly dis:connective quality of globalisation: connections were severed as they were perceived to be the main conduit for the spread of the virus. Initially transcontinental air travel, airports and trains were all deemed to be dangerous, then any form of social gathering including many work places. From a turbulence-theoretical perspective, the isomorphic nature of the responses and the speed with which they were implemented documented the dynamics of turbulence on a global scale.

The concept of turbulence lends itself well to a dis:connective approach to globalisation processes. Turbulence demonstrates that strong forces both connect and disrupt at the same time. It is this simultaneity of connection and disruption that makes turbulence a productive concept, even though the transfer of meteorological terms or the laws of fluid mechanics to social phenomena is by no means easy or

even achievable. The element of unforeseen consequences is also constitutive of turbulence as the ripple effects generate quite different impacts in distant locales even though the point of origin of the initial disturbance was the same. To understand and analyse turbulence it requires – to borrow a term from theatre phenomenologist Bert States – ‘binocular vision’ (1985, 8), which means holding disparate, even contradictory ‘modes of seeing’ in a kind of equilibrium. For States this means seeing performance with a semiotic and a phenomenological gaze to explain what happens on stage beyond mere signification: atmosphere, presence, the materiality of bodies and objects, to name only some of the aspects of performance that cannot be reduced to codes and signs. For globalisation studies binocular vision means seeing the action and the reaction, the connections and the disruptions at the same time. A binocular vision studies the disruptions caused by the connections. For example, the brain gain so often touted by advocates of migration creates brain drain in the countries of origin. These absences need to be brought into focus. Indeed, the phenomenon of migration, as it is currently discussed and legislated in the main target countries for migrants, demonstrates how the dynamics of turbulence produce largely isomorphic political reactions and legislative outcomes despite the highly disparate motivations of individuals and groups of migrants and refugees.

Australian media and performance artist Jill Scott has proposed rethinking turbulence beyond its equation with ‘a negative condition’ because ‘indispensable ideas have arisen from this state of emotion’ such as the suffragette movement or Occupy Wall Street, both of which led to disruption of social norms and ‘business as usual’ (2016, 7). Scott tries to combine ‘turbulence’ with ‘reconstruction’ as a conceptual pairing that can contribute to a re-evaluation of a ‘less dualistic’ relationship between art and science, especially in relation to re-envisioning sustainable, ecologically balanced futures. In this reading, turbulence becomes both a synonym for an aesthetics of disruption and a potential bridging concept for new ways to rethink art, design and media.

In the context of globalisation, however, the concept of turbulence is most productive when applied to the dynamics of mass movements and ideas that generate enough ‘kinetic’ energy to produce significant ripple-like effects. Applications of the term tend to oscillate between a synonym for unrest or upheaval where it is close in meaning to ‘unsettlement’ (→ **Unsettlement**) and the characteristic of inexplicable influence and connection between distant points. How particular movements, and not others, can spread so rapidly is not just a question of media dissemination, but it is also that; rather affective mechanisms are at work – during the Peasant’s War and the Arab Spring – which remain poorly understood but which produce in their wave-like movement significant impulses on a potentially global scale.

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