https://doi.org/10.21248/ka-notizen.87.91

Chemical Crisis

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Abstract

The proposition that there is a planetary chemical crisis that exists in conjunction with the climate crisis and the biodiversity crisis has been increasingly discussed. Indeed, according to the United Nations Environment Programme there is a 'triple planetary crisis' (climate, biodiversity, chemical), while many others argue that there is a 'polycrisis', of which the environmental crises are but elements. Prompted by Gisela Welz's account of how the Cyprus economic crisis was 'identified by experts', and reflecting on Reinhardt Koselleck's, Janet Roitman's and Stuart Hall's analyses of the concept of crisis, I argue that the chemical crisis might be understood as an event that has come to take multiple forms, remains contested and is without resolution.

Keywords: crisis, chemical, expertise, event, polycrisis

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Multiple Crises

I cannot be sure when the term chemical crisis was first used. Certainly by 2022, talk of what was variously referred to as the chemical and waste crisis, or the pollution crisis, or simply the chemical crisis, had become relatively commonplace, at least in some circles. It featured prominently in reports from the United Nations Environment Programme (UNEP), for example. But I'm not sure that the UNEP invented these terms, and I haven't yet found the author who claims to have used them first. Yet for a growing number of commentators, the chemical crisis[1] is part of a global environmental or ecological crisis, which includes the crisis of biodiversity, as well as the climate crisis, a term which had already been used towards the end of the 1980s (e.g. the World conference on Preparing for Climate Change 1989, Gore 1992: ix). In this way, the chemical crisis is understood as a systemic crisis, an element of what the UNEP terms a "triple planetary crisis" (UNEP 2022), which both parallels and interferes with a range of other systemic crises. Indeed, for some, the planetary environmental crisis is itself only part of a so-called polycrisis, which is economic and geopolitical as much as environmental (Helleiner 2024). But if the chemical crisis is systemic in some way, or an element of

[1] In the rest of this essay, I refer to the chemical crisis as a shorthand for the cluster of terms that refer variously to the existence of a chemical, waste and/or pollution crisis.

a larger system that is seemingly saturated with crises, it is also said to have a range of manifestations. These include a sense of pervasive contamination from PFAS ('forever chemicals'); the continuing use of highly toxic pesticides, despite international regulation; the multiple products of fossil fuel production, including benzene, sulphur oxides and black carbon; the presence of pharmaceuticals in fresh water; the accumulation of plastic; as well as specific spaces of intense pollution in the vicinity of chemical plants and mines. This empirical account of the chemical crisis was anticipated by the work of Rachel Carson. For Carson argued, already in 1962, that the distribution of dangerous chemicals was not contained:

> "for the first time in the history of the world, every human being is now subjected to contact with dangerous chemicals, from the moment of conception until death. In the less than two decades of their use, the synthetic pesticides have been so thoroughly distributed throughout the animate and inanimate world they occur virtually everywhere" (Carson 2000: 31).

Before addressing the chemical crisis, however, I want to consider the topic of crisis in general via the work of Gisela Welz.

In her book, *European Products,* Gisela Welz (2015) dwells on the ways in which substances and places both become products and become European. In Cyprus, for example, halloumi turns out to be not just a local form of cheese – a traditional product – but a substance that is both governed and protected by European regulation. Its traditional status, and geographic origin, require decidedly non-traditional methods to be sustained. But the question of whether halloumi is an exclusively European product, or not, is far from straightforward, for as she observes, "Halloumi, or hellim [in Turkish], is a cheese that does not belong to any one ethnic group or nation alone" (Welz 2015: 96). In Welz's analysis halloumi/hellim is marked by an internal difference, a manifestation of a multiethnic and multireligious heritage of Cyprus, divided in 1974. One might say that halloumi is a Greek Cypriot (and therefore European) product even though it is both different and yet materially identical to the Turkish hellim. The political history of both Cyprus and the EU necessarily play a critical part in the circulation and commodification of the product. Halloumi is also what I would call an *informed material* (Barry 2005): a substance that is transformed by an informational and legal supplement that is demanded by European regulation. Following Welz, one can say that halloumi is but one of a range of things that have been "materially reconstructed", "identified by experts" and "regulated under national law and transnational conventions" (Welz 2015: 1). Indeed, when halloumi is understood as an object of European regulation, it can come to take variable biochemical forms. For as the market for halloumi grew, and demand stretched the limits of supply, regulation came to allow producers to produce bovine as well as ovine cheese, even though these cheeses, as one study put it, have significantly different chemical characteristics (Papademos & Robinson 2000). These particular lessons have wider significance.

Here my concern is not with heritage, or even with the framework of European regulation that governs what can be sold as a traditional product. I am interested in the political geography of 'chemical characteristics', and I am also concerned with the economic event that forces itself into Welz's ethnography.[2] For just as there is a wealth of expertise about heritage

[2] On the notion of the event, in the sense that I use the term here, see Ingram (2019).

and food products, including halloumi, there is a wealth of expertise about financial products possessed by the experts, bureaucrats and politicians from what came to be known as the Troika – the European Commission, the Central Bank and the IMF – who collectively made their presence felt by imposing 'harsh measures' on Cyprus in a time of economic crisis. The event of economic crisis makes its presence felt in Gisela Welz's fieldwork in around 2013–2014. In 2012, none of her "research interlocutors and colleagues and friends", she notes, "could have anticipated what was going to happen a few months later" (Welz 2015: 160). But upon returning to Cyprus in 2014, Welz encounters a country hit by the wave of measures that made Cyprus a *crisis-stricken* country, in which ordinary citizens and small businesses lost out, and youth unemployment jumped from 14 to 33% over the course of a year. Those businesses that sold European products were powerfully affected by the economic crisis, in which European institutions played a critical role – both by naming the crisis as a crisis, and by determining what its solution should be. As Welz's analysis of the economic crisis in Cyprus makes clear, however, the crisis was never merely economic, and its consequences were unevenly felt, impacting particularly on ordinary citizens and on small businesses, from hotels to farms. The Troika's interventions in the crisis intensified the experience of the crisis, particularly for those who did not have substantial resources to evade its most serious consequences. This was a situation in which bankers and financial experts in Brussels and Frankfurt, some from the Troika, made their own contributions to the crisis' existence. Thirteen years later, one member of the supervisory board of the European Central Bank reflected on the crisis of 2013. His language speaks of the critical importance of financial expertise in what he took to be the resolution of the crisis: "The road to recovery was anything but smooth. Towards the end of 2013, while still mitigating the effects of the crisis, the largest European banks were engaged in the comprehensive exercise – the Asset Quality Review – conducted at the onset of the Single Supervisory Mechanism" (ECB 2026). Talk of asset quality reviews and single supervisory mechanisms makes clear that the crisis was "identified by experts" (Welz 2015: 1).

Of course, talk of economic and financial crises is not new. As Reinhardt Koselleck once observed, by the late 19th century the term crisis had already become closely linked to the idea of an economic crisis. To be sure, the concept of crisis had acquired some currency in earlier periods. He notes that the English conservative, Edmund Burke, in his *Reflections on the Revolution in France*, exclaimed that "the declaration of a new species of government […] is a real crisis in the politics of Europe" (Burke 1976 [1790], cited in Koselleck 2006: 375). But by the late 19th century accounts of economic crisis had gained what Koselleck terms "theoretical rigor" (ibid.: 384). At the same time, his contention is that "economic crises – despite the misery and despair they caused and intensified – were transitional (not permanent). That perception made it possible to insert economic crises into specific philosophies of history" (ibid.: 392–393). In this way, Koselleck notes, "*economic crisis theories,* both liberal and socialist, also influenced public perceptions" (ibid., my emphasis). It was natural, in this context, for Marx and Engels to "integrate the economic concept of crisis into their political and historical analysis […] in the *Communist Manifesto"* (ibid.: 394). The idea of an 'economic crisis' therefore became an object of political economic inquiry, and this inquiry affected both the experience and the direction of the crises that unfolded.

In his essay on crisis, Koselleck notes that the term has become ubiquitous, and its meaning has been stretched far beyond the economic. There has been – as he puts it, making use of an economic metaphor – an inflation in the use of the word crisis. Crises abound. A related point is made by the anthropologist Janet Roitman in her book *Anti-Crisis*, published in the

wake of what came to be called the financial crisis of 2008–2010, which itself compounded the housing crisis. At first glance, then, the term 'chemical crisis' is just another of the multiple crises referred to by Koselleck and Roitman. It joins long and apparently expanding and intersecting crises, occurring at multiple scales, with growing rapidity: the environmental crisis, the biodiversity crisis, the Ukraine crisis, the crisis of democracy, and the demographic crisis (Davies et al. 2026: 8–14). Yet Roitman goes further than Koselleck, insisting that we treat crisis "as an object of knowledge" and asking what the use of the term crisis does in practice (Roitman 2013: 4). She is not so much concerned, as Koselleck was, with the philosophy of history, but with the proliferation of experts in diagnosing and performing crisis. They include economists, such as those that inform the work of the ECB, which is such a significant player in Welz's narrative and in the event of the Cyprus economic crisis. As Roitman observes, designating a situation as a crisis may both justify radical forms of intervention, and also preclude the possibility of other forms of action or, indeed, a more measured response. In addition, Roitman's analysis directs us to consider the ways in which crises today, including the chemical crisis, tend to be viewed as both connected and reinforcing.

Polycrisis

There is doubtless an inflation in the quantity of crises talk, as Koselleck and Roitman demonstrate (Ashenden in Davies et al. 2026). But while acknowledging this remarkable proliferation of crises, it is possible to identify two distinct ways in which crises become, as Roitman puts it, "object[s] of knowledge" (Roitman 2013: 4).

First, there is the existence of specialist expertise about crises and crisis management. There is a wide range of interdisciplinary expertise that engages with the problem of how to address crisis situations, such as those associated with public health and environmental risk. For example, one study by the Department of Environmental Sciences at the U.S. Naval Academy sought to find "Physical–Chemical Crisis Indicators", such as abnormal pH levels, which may indicate a "dangerous environmental situation" (Williams 1972: 174). Similarly, there is a specific body of expertise concerned with more-or-less localised 'chemical crises' resulting from industrial accidents or the use of chemical weapons. A recent Norwegian study, for example, analysed the forms of crisis response that could be put in place in Europe following a Chemical Warfare attack (Davidson et al. 2019).

Second, from the early 2020s onwards, some analysts began to speak not just of many crises but a *polycrisis*. This idea that crises are interconnected was first proposed by the complexity theorist Edgar Morin and the writer Anne Brigitte Kern. For Morin and Kern, "the uncontrolled adventure of technoscience is the major problem: it dominates the problem of development and that of civilization; it has influenced the population surge and the ecological threat" (Morin & Kern 1999: 73). In their work, the polycrisis named a sense of what they termed "inter-retroactions" (ibid.) between multiple crises which, 'from a wider perspective', leads to the recognition that the "crisis of the anthroposphere and that of the biosphere are mutually implicative" (ibid.: 74). Whereas Morin had earlier reflected on the sociological challenge of May 68 in an essay "[p]our une sociologie de la crise" (Morin 1968, Atack 1997), references to the polycrisis have become commonplace in mainstream economic debates, figuring centrally in discussions of the World Economic Forum in Davos in 2023, for example.[3]

[3] https://www.weforum.org/stories/2023/01/polycrisis-global-risks-report-cost-of-living/ (last accessed 23 May 2026)

Indeed, the influential historian and blogger Adam Tooze contributed to the dissemination of the concept, writing in the *Financial Times,*

> "a problem becomes a crisis when it challenges our ability to cope and thus threatens our identity. In the polycrisis, the shocks are disparate, but they interact so that the whole is even more overwhelming than the sum of the parts. At times one feels as if one is losing one's sense of reality." (Tooze 2022)

From Polycrisis to Chemical Crisis

The idea that the chemical crisis should be understood in its relation to the climate and biodiversity crises makes sense, even if the relations are seldom analysed. After all, efforts to reduce the use of fossil fuels in order to address the climate crisis have given further impetus to the use of hydrocarbon resources as feedstocks for plastics production, thereby exacerbating the chemical crisis. And the transition to renewables informs the current political interest in another keyword, "critical minerals", which generates its own geopolitical and environmental problems (Barry in Davies et al. 2026: 16, Laurent et al. 2025). The chemical crisis turns out not just to be a crisis of pollution, waste and chemical exposure, but also a crisis of resources. Yet while it seems reasonable to place the chemical crisis alongside the climate and biodiversity crises it is worth pausing and asking how the chemical crisis, in particular, has become an object of knowledge. As Sam Ashenden argues, "the consequences of crisis talk can have radically different valences depending on the domain in question" (Ashenden in Davies et al. 2026: 13). How has the chemical crisis, following Welz, been "identified by experts" (Welz 2015: 1, see also Welz 2021: 45–46)? And what consequences does this have?

The recent naming of the chemical crisis by the UN Environment Programme has evident political implications. It serves to justify the proposal for a global chemical and waste panel, which would sit in parallel to the existing UN panels for biodiversity and climate change. But the chemical problem is not the same as the biodiversity or climate crisis, and it presents radically different challenges to these crises when identified by experts (Allan et al. 2025). For a start, because the IPCC currently performs a *global assessment* of climate change, which focuses the predictions on global models and on a small number of key indicators. Yet while such a global assessment of climate change is possible, there are a myriad different chemical pollutants, from pesticides to PFAS, all with their own specific geographies and toxicities. Indeed, there are "[a]n estimated 350,000 chemicals and chemical mixtures […] registered in regional and national inventories", of which "6000 industrial chemicals account for more than 99% of the volume of chemicals used commercially", and many more when waste streams are considered (ibid.: 2). Moreover, because even at a national level, regulatory systems for chemicals are fragmented. Agricultural pesticides, plastics, pharmaceuticals, marine pollution, and mine waste, are not regulated by the same ministries or by the same international agreements. And experts concerned with chemicals are distributed across an equally fragmented array of international bodies: there is no equivalent of the Troika for chemicals. And finally, and most crucially, whereas extensive knowledge about climate change exists in well-funded public institutions as well as industry, knowledge about the properties of specific chemicals is to be found primarily in industry. In these circumstances, there are structural inequalities between the knowledge and expertise of industry and affected populations. And yet, the recognition of the continuing existence of these inequalities in chemical

expertise has provided a powerful justification, and motivation, for the development of diverse and localised forms of citizen and anti-colonial science. Crisis, then, is not only the object of expert knowledge; it can be identified and addressed from below through the contestation of expertise.

A Postcolonial Crisis

Towards the end of her book *European Products*, Welz (2015) offers a postcolonial reading of the Cyprus economic crisis. As she records, the austerity measures that southern European countries, including Cyprus, had to submit to are "experienced by many as colonial impositions", so that "[p]ostcolonial theory is an apt instrument of critique" (ibid.: 165). As she observes, "[n]obody will be surprised", in a time of crisis, if "economic interests win out against other considerations such as environmental integrity, public health and the sustainable management of natural resources" (ibid.: 166). In drawing on postcolonial theory, Welz turns to the work of Latin American decolonial scholars. Here, in contrast I want to turn to the work of the British Jamaican sociologist and postcolonial theorist, Stuart Hall, who developed an analysis of crisis at the time of Thatcherism (Hall 2017). In doing so, Hall was particularly influenced by Antonio Gramsci, who argued in turn that the Italian South had become an "exploitable colony" (Gramsci 1978: 441) and offered an alternative to economistic interpretations of Marx's analysis of crisis and revolution. For Hall, drawing on Gramsci, crises had to be understood as the products of discontinuous and related histories, conjunctures of different historical trajectories, which have their own temporalities. Hall does not write about systems, nor is his account in dialogue with Morin's account of polycrisis. Rather, importantly, Hall conceived of crisis as the focus of shifting political struggles, with their own histories and geographies. Crises were 'organic', the product of structural contradictions, but they also necessarily took contingent and conjunctural forms. In the British context, Hall dwelt on the significance of a series of historical dynamics: the legacy of empire; the contradictions of social democracy; the fluidity of identity and popular culture; and the significance of race in "policing the crisis" (Hall et al. 2026). In his analyses, crises are certainly not just moments that can and should be identified by experts; and they are never only, or largely, economic. Moreover, they can stretch over decades, they are necessarily contested, and "their resolution is not given" (Hall & Massey 2010: 57).

If, following Hall, we accept that crises are intensified by conjunctures composed of different temporalities, then the diagnosis of the chemical crisis poses specific challenges. For, as is widely recognised, specific chemicals accumulate in rivers, soil and bodies, and may only break down slowly and disperse at different rates. If the chemical crisis is to be understood as a crisis, then perhaps it might best be understood not just as something systemic, nor as something that should only be conceived as an element of a wider planetary crisis. Rather, we might understand the chemical crisis, as Welz's work suggests, from the position of those who experience the crisis, including those most affected, both now and in the future, and who are often not in a position to challenge the authority of those who come to name it as a crisis nor to intervene. The chemical crisis is, then, an event that has come to take multiple forms, remains contested, open-ended, and is without resolution.

Acknowledgments

My thanks to Jennifer Allan, Timo Roßmann and Ingmar Lippert for their comments, Sam Ashenden for the inspiration of her essay on crisis, and Alan Ingram and our students for ongoing discussions of geopolitical events.

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