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Going around in circles? Conceptual recycling, patching and policy layering in the EU circular economy package

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ABSTRACT

The circular economy (CE) concept is informing the governance of resource use and waste management on a global scale, leading to widespread policy instrument innovation. However, the recent appearance of CE ‘policy portfolios’ raises questions about whether such policies are genuinely path-breaking or are merely adjustments to existing arrangements. Tracing the emergence of the European Union’s Circular Economy Package shows that, while some measures are genuinely novel, many others are ‘patched’ onto pre-existing instruments and that the overall portfolio exhibits a high degree of institutional ‘layering’. Given the evidence of relative ineffectiveness of past incremental environmental interventions, there is a mismatch between such approaches and the scale, pace, and scope of transformation implied by contemporary articulations of the circular economy concept. Creating the policy conditions for sustainable production and consumption may require more radical policy formulations than CE proponents acknowledge.

KEYWORDS Circular economic governance; policy portfolios; conceptual recycling; layering; European Union; historical institutionalism

Introduction

Relieving the burden of human civilisation on the earth’s material resources while protecting future prosperity challenges contemporary environmental politics (Izak *et al.* 2015). In response, the normative concept of the circular economy (CE), which integrates environmental and economic objectives into a distinctive model of ‘sustainable growth’, has rapidly come to dominate the discussion about how best to disrupt unsustainable development patterns. A defining CE characteristic ‘is the valuation of materials within a closed-looped system with the aim to allow for natural resource use while reducing pollution or avoiding resource constraints and sustaining economic growth’ (Winans *et al.* 2017, p. 825, see also Ghisellini *et al.* 2016). Scientific

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understanding of CE remains dispersed across disciplines and competing conceptualisations abound (Korhonen *et al.* 2018). However, scholars argue that operationalising the circular economy necessitates establishing ‘an economic system that replaces the “end-of-life” concept with reducing, alternatively reusing, recycling and recovering materials in production/distribution and consumption processes’ (Kirchherr *et al.* 2017, p. 229). Supporters therefore cite the radical potential of CE to underpin a paradigmatic transition from linear modes of economic organisation to more self-sustaining, non-linear consumption patterns (for example, Ellen MacArthur Foundation 2018), thereby strongly integrating with sustainable development principles (Geissdoerfer *et al.* 2017). In this way, proponents present the transition to a circular economy as simultaneously radical and ‘perfect business sense’ (Korhonen *et al.* 2018, p. 45). CE is thus depoliticised through a ‘win-win’ narrative, reflecting the dominance of ‘ecological modernisation’ discourses in EU environmental politics over recent decades (Machin 2019).

The degree to which the CE is achievable through contemporary policy responses is nonetheless debatable; critics highlight that many current conceptions do not challenge the fundamental ‘power, norms and politics’ of modern capitalism and therefore represent incremental rather than transformative change (Hobson and Lynch 2016, p. 17). At the same time, expert opinion surveys suggest that CE implementation faces multiple challenges including cultural, market and regulatory barriers (Kirchherr *et al.* 2018). Some authors question whether neoliberal environmental governance approaches commonly associated with CE, such as standards, can ensure CE practices unless they challenge some of the underlying market relationships (Flynn and Hacking 2019). Despite the emergence of multiple policy ‘portfolios’ or ‘mixes’ (Howlett and Del Rio 2015, Howlett *et al.* 2015) designed to translate the CE idea into economic reality, we posit that their often incremental nature may not fully support such radical transformation.

The European Union (EU) is a case in point. The EU has long set the agenda for resource use and waste policy for constituent Member States; the introduction of its Circular Economy Package – encompassing a broad suite of policy instruments – appears at first glance to be a radical shift in the EU policy-making trajectory. Rather than addressing end-of-pipe externalities from linear modes of production *per se*, the policy prioritises ‘closing the loop’ between economic inputs and outputs in an ‘ambitious’ reorientation of socio-economic relations (European Commission 2018a). The European Commission thus refers to its policy portfolio as helping ‘businesses and consumers to make the transition to a stronger and more circular economy’ (*ibid.*).

However, the Circular Economy Package appears an altogether less dramatic departure when viewed in the light of historical trends; the EU has adopted policy measures influenced by ‘closed-loop’ thinking in several waves since the 1970s. In reality, much of this change appears to be

incremental modification, with policy instruments ‘layered’ or ‘patched’ (see Howlett *et al.* 2015, Howlett and Mukherjee 2017, van der Heijden and Kuhlmann 2017) onto pre-existing institutional frameworks. The modest refashioning of existing policy represented in the contemporary EU CE approach raises questions regarding the capacity of incrementalism to deliver the profound economic and social change that CE implies.

Some scholars have argued that incremental adjustment within environmental policy sub-systems can realise positive outcomes over long time scales by enabling learning between policy actors (for example, Sabatier 1988). Similarly, we should not discount the power of overarching metaphors, ideas or *leitmotifs* (such as the Circular Economy) to define policy paradigms and ‘structure many aspects of what is to be done’ (Hall 1993, p. 292), especially where there appears to have been a ‘radical shift in the hierarchy of goals guiding policy’ (*ibid* p. 284). Nevertheless, the lack of precision or consistency surrounding use of the CE concept (Korhonen *et al.* 2018) and the historical development of EU circular economy policy suggest to us that CE has yet to become the dominant paradigm for EU policymaking. Indeed, scholars have noted the past propensity of the European Commission to instigate purportedly fundamental shifts in regulatory environmental policymaking which, in reality, were merely ‘old wine in new bottles’ (Rittberger and Richardson 2003, p. 575).

Here, we build an account of the incremental evolution of the EU circular economy policy portfolio development by adopting a specific structure. First, we develop an analytical approach that draws on institutional theory and contemporary policy portfolio arguments to create a framework to assess the degree and nature of policy innovation. Second, we briefly examine CE conceptualisations to show how the current articulation is essentially a re-framing of much earlier policy discourses around *inter alia*, closed-loop systems, sustainable consumption and production, industrial symbiosis and the 3R¹ concept. We then analyse how the temporality of this conceptual recycling manifests in policymaking through the policy evolution from the 1970s to 2018, uncovering an ongoing process of continual incremental adjustment rather than any significant ‘step changes’. Third, given the nature of the policy innovation that we observe, we pose a critical question: *can incremental adjustment over time deliver on the goals of the circular economy, or is genuinely new policy necessary?* In this respect, we conclude that this ongoing process has not yet resulted in significant economic transformation, challenging the European Commission’s claims regarding the capacity of the present ‘ambitious’ approach to deliver a Europe-wide CE. Finally, we reflect on how our analysis can potentially enhance future EU circular economy governance and attendant opportunities for further research.

Analysing incremental adjustment in policy portfolios

When examining incremental institutional change, we can best interpret portfolios through the lens of institutional theory, viewing past and current arrangements in terms of institutionalised practices, rules, processes, and actors (van der Heijden 2011). From this perspective, rather than the direct replacement of one institutional form with another, institutions may change through the reconfiguration or repurposing of existing structures through processes such as ‘bricolage’ or ‘translation’ (Campbell 2006, 2009). For Thelen (2004), rules and policies as institutions can be subject to gradual change in which new institutional elements are added without the original policy being replaced: a process she labels ‘layering’ that results largely from ‘path dependency’ (Thelen 1999, p. 384). According to Pierson (2004, p. 21), institutions are subject to ‘positive feedback (or self-reinforcement)’ that supports ‘path dependence’, meaning that the sunk costs of significant change can deter alternative actions. Thelen also discusses other modes of institutional change (see van der Heijden and Kuhlmann 2017, p. 538). So-called ‘conversion’ can occur through the ‘redployment or reinterpretation of existing elements of an institution for new purposes’ via reorientation of their objectives (van der Heijden 2011, p.11, Mahoney and Thelen 2010). In addition, Streeck and Thelen (2005, p. 19) refer to ‘displacement’ whereby ‘new models emerge and diffuse’ to replace pre-existing institutions. Policy portfolios can therefore emerge as an entirely new ‘package’ to replace previous mixes (Howlett and Rayner 2013a, p.12–13, 2013b). In reality, completely novel institutions are considered rare (Thelen 2009, van der Heijden and Kuhlmann 2017). For example, Howlett *et al.* (2015, p.299–300) argue that most ‘policy mixes’ are rarely packaged as new because ‘design circumstances involve building on the foundations created in another era’. They suggest that, due to prior institutional ‘lock-in’ or ‘policy legacies’, policy developers ‘often attempt to patch or restructure existing policy elements rather than propose alternatives *de novo*’ (ibid.; see also Howlett and Rayner 2013b). Patching or limited adjustment to instrument calibration therefore becomes a logical response for policymakers reacting to changed external environments but constrained in scope for substantive policy change by endogenous factors (Kern *et al.* 2017). In this respect, policy portfolios can theoretically be subject to several developmental processes, including layering, conversion, and patching (Howlett and Rayner 2013a).

In the following analysis of the emergence of what has become known as the EU’s ‘Circular Economy’ policy portfolio, we draw upon these strands of institutional theory to establish the novel analytical matrix below (Figure 1). Each quadrant of the matrix describes the expected observation for the development of the Circular Economy Package under each of four distinctive (although not mutually exclusive) modes of institutional change. The

		Degree of novelty in instrument selection	
		HIGH	LOW
Degree of change in goals or objectives	HIGH	Packaging: a portfolio of novel instruments specifically developed to address new challenges	Conversion: re-purposing existing instruments towards new challenges
	LOW	Layering: introducing new instruments to existing arrangements in response to new challenges	Patching: re-calibration, adjustment or revision of existing instruments in response to changed context

Figure 1. Four dimensions of institutional (non)change in policy portfolios.

horizontal axis denotes a continuum from high to low degrees of policy instrument innovation. The vertical axis defines another continuum between high and low degrees of change in policy objectives. *Packaging* necessarily involves high instrument innovation and a reorientation of policy objectives resulting in the creation of a novel, bespoke, circular economy instrument portfolio. In contrast, *conversion* denotes low instrument innovation but significant changes to existing policy objectives in response to fundamentally changed imperatives associated with the Circular Economy. *Patching* tends to involve only incremental adjustment of existing instruments, with low instrument innovation and objectives change. Finally, *layering* may involve the implementation of new Circular Economy instruments but, crucially, little substantive change in the underlying policy objectives, thereby giving the superficial appearance of novelty.

The road to the EU circular economy package

In order to show how incremental institutional adjustment has occurred in EU circular economy policy, we trace its evolution back through time. The influence of CE thinking is certainly not new and is the latest incarnation of a suite of ideas first aired in the 1970s. For example, Reike *et al.* (2018, p. 248) detect three developmental phases in conceptions of the circular economy over the last century. Others trace the concept back through various iterations to the green economy debate of the 1990s (Ghisellini *et al.* 2016). However, if we explicitly consider public policy, concerns over the depletion of global resources in the 1970s led to the widespread adoption by policymakers of ‘closed-loop economy’ ideas promoting reuse and recycling of waste products in order to reduce energy inputs (Stahel and Reday-Mulvey 1981). The 1980s

also witnessed the development of industry-specific concepts that integrate these ideas, primarily ‘industrial ecology’ (Frosch and Gallopoulos 1989, Jelinski *et al.* 1992), later reinterpreted as ‘industrial symbiosis’ (Lombardi and Laybourn 2012). Such notions are also inherent to sustainable development policy that emerged after the Brundtland Report and the Rio UNCED process in the late 1980s and 1990s. Agenda 21 (United Nations Conference on Environment and Sustainable Development (UNCED) 1992, p. 21.5) endorses the principle of integrated life-cycle management through reducing waste production and promoting recycling and reuse. Although this conception proved influential on policymakers worldwide, by the early 2000s the 3R concept had permeated national policymaking, particularly in East Asia, where it was heavily promoted by the Association of Southeast Asian Nations (ASEAN) (Kojima and Damanhuri 2009). The circular economy concept then emerged more forcefully within global and national policy circles in the 2010s, advanced by ‘policy entrepreneurs’ (Kingdon 1984, p. 122, Fitch-Roy *et al.* 2018, see also Cairney 2018), such as the Ellen MacArthur Foundation (Cooper-Searle *et al.* 2018).

Since the 1970s, several semi-distinct waves of European level policy development have emerged to underpin the current EU Circular Economy Package that mirror the patterns of conceptual recycling discussed above. Closed-loop thinking, sustainable production, and consumption and the circular economy itself feature prominently in the cyclical way that the EU has framed and then reframed policy to expand its institutions. In this context, framing is in effect a communication technique that selectively highlights features of reality while omitting others and is a key discursive factor in policy change (Entman 1991, Schmidt 2010). According to Daviter (2007, p. 654), in the EU political system featuring ‘competing constituencies and contested competencies’, framing exerts strong influences over policy outcomes; as the historical evolution of CE policy illustrates.

Phase one: ‘closed-loop’ thinking

In 1972, responding to growing global environmental concerns, the European Commission Chairman Sicco Mansholt wrote that the European Economic Community (EEC) required new economic thinking based on reducing resource use per capita while increasing product lifespans and preventing resource waste (Vonkeman 1996). The EEC prioritised waste management policy after the Paris Council 1972 and charged the European Commission with producing a Community environmental policy. The Commission’s First Environment Action Programme (EAP) set policy priorities (European Communities 1973); it was a rambling document that identified important environmental concerns and was short on policy specifics. Even at this stage, the notion of non-linearity is apparent in policy prescriptions with the

European Commission identifying a rationale for Community legal intervention ‘if the elimination or re-use of wastes are dependent on economic resources’ (ibid., p. 29). The Commission prioritised specific chemicals, heavy metals, waste oil, scrap metals, animal waste and – interestingly because of the current focus of policy – plastics and non-biodegradable packaging (ibid., p. 29). The Programme also specified legislative harmonisation, leading to rapid adoption of the Directive on Waste (or Waste Framework Directive) 75/442/EEC. Another Directive on the disposal of waste oils (75/439/EEC) was adopted in 1975, followed by Directive 86/278/EEC on reusing sewage sludge in agriculture. Obligations on member states included taking ‘appropriate steps to encourage the prevention, recycling and processing of waste, the extraction of raw materials and possibly energy therefrom and any other process for the re-use of waste’ (European Communities 1975, p. 40). The Directive actively encouraged waste reduction, recycling, re-use and recovery of wastes (ibid.). However, as McCormick (2001, p. 169) states, while the ‘goals of the directive were noble, member states were given considerable latitude on implementation’ leading to limited effectiveness. Nonetheless, directives on disposal of titanium dioxide waste (78/176/EEC) and hazardous waste management (78/319/EEC) then followed.

Closed-loop economy thinking also increasingly influenced the European Commission in framing its policy development. One of its research reports in 1977, *The Potential for Substituting Manpower for Energy*, presented the ideas of Walter Stahel and Genevieve Reday (Stahel and Reday 1977, see also Stahel and Reday-Mulvey 1981, Stahel 2016). Stahel, based at the Batelle Geneva Research Institute, had pioneered the notion of closed-loop production, arguing that new employment opportunities could be created through greater recycling and reconditioning of waste products. Such ideas proved attractive to the European Commission, faced with countering rising EEC unemployment and energy prices in the wake of the global oil crisis. The Second EAP, adopted in 1977, clearly endorses closed-loop thinking, with waste generation, recycling and re-use targeted for policy action. Citing the opinions of the Commission Committee on Waste Management and the CREST Study Subcommittee Research and Development, the EAP prioritised remedial policy measures for certain wastes, including plastics and glass (European Communities 1977, p. 34). However, subsequent concerns over poor implementation of existing EEC waste policy preceded adoption of the Seveso Directive 82/501/EEC for industrial disaster risk reduction, plus Council Regulation (EEC) No 259/93, implementing the 1989 Basel Convention on procedures for the transboundary shipment of wastes.

Further EEC legal instruments, reflecting closed-loop thinking, followed in response to emergent Europe-wide problems with waste management. Seeking to balance a free market in transboundary waste shipments with preventing some states becoming ‘disposal havens’ (Golub 1996, p. 317), the EEC

introduced rules to harmonise national measures on packaging and packaging waste under Directive 94/62/EC. The directive sought to limit volumes of waste packaging through encouraging reuse and recovery. Member states were required to establish waste collection systems, set recovery and recycling targets and prohibit the sale of packaging not meeting specified standards for recoverability. Implementation effectiveness proved highly variable between member states and waste streams, with significant differences in national implementing measures and recovery rates (Bailey 1999, Haigh 2005): features still evident in the application of the amended Packaging and Packaging Waste Directive (2004/12/EC). Directive 85/339/EEC on containers of liquids for human consumption was then adopted, although later repealed. Rather than simply reducing the disposal of waste containers, this measure covered their 'production, marketing, use, recycling and refilling' in order to 'encourage a reduction in the consumption of energy and raw materials' (European Communities 1985, p. 18). Another instrument, the Batteries Directive (91/157/EEC), originally sought to prohibit alkaline manganese batteries containing mercury but was subsequently amended to ban all batteries of this type incorporated into appliances. Finally, another landmark policy adopted in this period was the Landfill Directive 1999/31/EC. A reaction to continued waste management problems across Europe, it makes a significant contribution to the circular economy through restricting wastes sent to landfill, classifying landfill sites, obliging waste pre-treatment for landfilling and setting out procedures for landfill operations.

Phase two: sustainable production and consumption

By the early 2000s, sustainable development principles increasingly influenced EU waste and resource policy as EU actors reframed closed-loop economy ideas into a new agenda. Such reframing was evident after the UN Rio Conference with the publication of the Fifth Environment Action Programme in 1993. Endorsing the principles of sustainable development and the 'polluter pays', the EAP identified several wastes streams for urgent attention including waste electrical and electronic equipment (WEEE) (European Communities 1993, Haigh 2005). The EU subsequently introduced ecolabelling schemes to integrate resource efficiency into product design (McCormick 2001). An EU integrated product policy, based on reducing the life-cycle impacts of goods, then followed (ibid.). The European Commission proposed a WEEE Directive in 2000, alongside proposals for a directive restricting hazardous substances (RoHS) in electrical and electronic equipment. Adopted in 2002, the WEEE Directive 2002/96/EC aims at preventing waste in addition to its reuse, recycling, and recovery. A key measure is the compulsion on member states to establish extended producer responsibility (EPR) for disposing of WEEE. The RoHS

Directive, however, focuses primarily on reducing hazardous materials use in such products. Other significant instruments introduced in this period included the Directive on end-of-life vehicles (ELV) 2000/53/EC, which heavily reflected circular economy EPR principles through its requirement for manufacturer collection and recycling systems for ELV.

Sustainable consumption and production then featured as a critical objective of the UN WSSD (World Summit on Sustainable Development) Johannesburg Conference (Rio +10) in 2002, in turn influencing the direction of EU policy (United Nations 2002). The Johannesburg Plan of Implementation devotes a whole section (22) to preventing and minimizing wastes in conjunction with maximizing ‘reuse, recycling and use of environmentally friendly alternatives’ (UN 2002: 13). In advance of the WSSD, the European Council adopted its first Sustainable Development Strategy (or SDS) in Gothenburg 2001. The SDS and WSSD, in turn, informed development of the Sixth EAP, titled ‘Towards Sustainability’, in 2002. Departing from previous EAPs, the Programme took a thematic perspective on critical sustainable development issues, specifying the need for cross-cutting policies (European Communities 2002). The EU’s resultant ‘Thematic Strategies’ (ibid., p. 6) subsequently included two new integrated policies for the prevention and recycling of waste, and sustainable use of resources. Again, closed-loop economy arguments are visible in the European Commission’s thinking, with the latter strategy aimed squarely at de-coupling economic growth from environmental impacts through examining ‘the whole life-cycle of our natural resources’ (European Commission 2003, p. 1). Although the Thematic Strategies set the broad direction of subsequent EU policy, they nonetheless informed development of specific instruments. Building on the earlier introduction of product-specific legislation, the Batteries Directive 2006/66/EC repealed the 1991 measure, which suffered from poor implementation. Covering all types of batteries, the directive is noticeable for the way it embodies CE thinking. While it prohibits some types of batteries containing hazardous substances, it also compels EPR through collection and recycling schemes along with setting recycling targets.

Phase three: circular economy

A new phase in integrating circularity into EU resource use and waste policy emerged in 2010. Here, another major reframing occurred from sustainability arguments to an emphasis on economic growth under austerity. Under Belgium’s EU Presidency, the Flemish Environment Minister Schauvliege, then President of the Environment Council, prioritised life-cycle management and the closed-loop economy for EU policy action (Ellen MacArthur Foundation 2010). Flemish politicians transferred their knowledge from developing their own circular economy initiative via the Industry Council.

Consequently, the European Commission published its Roadmap to a Resource Efficient Europe in 2011 under its broader Europe 2020 Strategy for economic growth. The European Commission (2011, p. 2) reframed resource efficiency as an important component of EU global competitiveness, as a means of boosting employment and business profitability through an economic ‘transformation’ Referring to the development of a green economy (see Russel and Benson 2014), the Roadmap identified policy objectives for informing subsequent instrument adoption. The Commission established actions for ‘transforming the economy’ in priority sectors, including resource efficiency, ecosystems services and buildings efficiency (European Commission 2011, p. 4–23).

After this point, the European Commission appeared to consolidate policy development specifically under the circular economy discourse, placing it within broader economic priorities. The European Resource Efficiency Platform, a high level multi-stakeholder advisory body established to provide policy guidance to the EU, prioritised the concept. A manifesto published by this body stated that ‘the EU has no choice but to go for the transition to a resource-efficient and ultimately regenerative circular economy’ ((European Resource Efficiency Platform (EREP) 2014, p. 4). Circular economy arguments then subsequently entered EU strategic policy documents more frequently, displacing earlier conceptions of sustainable resource use. The communication document, *Towards a Circular Economy: A Zero Waste Programme for Europe*, encapsulates this reframing where the Commission set out its policy priorities. Faced again with an ongoing economic crisis, the European Commission emphasised links between competitiveness and resource efficiency, arguing that by ‘helping to decouple economic growth from resource use ... [the circular economy] ... offers the prospect of sustainable growth that will last’ (European Commission 2014a, p. 3).

The European Commission proposed a new directive in July 2014 aiming to reinforce the principles of CE in several areas of EU law associated with waste (European Commission 2014b). The bold but controversial proposals included targets for 70% of municipal waste to be reused or recycled by 2030. In December of the same year, however, the incoming Juncker Commission abandoned the plans, in part due to anticipated resistance from some member states with poor recycling rates and infrastructure (Bourguignon 2016). The Commission made an announcement that ‘a more ambitious proposal that will cover the whole of the circular economy’ would be forthcoming and the legislative proposal was subsequently formally withdrawn in March 2015.

A new suite of EU actions quickly followed in December 2015. *Closing the Loop – An EU Action Plan for the Circular Economy* Strategic set the policy direction (European Commission 2015). Compared to the 2014 proposal, the waste management targets in the ‘re-booted’ 2015 CE programme were substantially lower (the headline for municipal reuse and recycling reduced to 65%, for example), there was less emphasis on food waste and derogations

were provided to a number of member states in the form of extended deadlines for compliance. However, the overall scope of the plans is substantially broader, acknowledging that the circular economy entails action across multiple sectors. Again, the transition to a circular economy was strongly linked to competitiveness, with the Action Plan describing it as ‘the opportunity to transform our economy’ (ibid., p. 2). The Package also comprised proposals to revise existing waste management directives. Legislative changes would, according to the European Commission, ‘facilitate industrial symbiosis’ by clarifying rules regarding waste by-products (ibid., p. 6). In the area of product design and production processes, the Commission prioritised greater circularity through a revised Ecodesign Directive (2009/125/EC). The Commission also targeted consumption through the proposed adoption of enhanced information on product durability in energy labelling, new rules on reuse and actions to increase Green Public Procurement as a tool for the circular economy. Specific sectors were also targeted, mainly through proposed revisions to pre-existing regulation of fertilisers and packaging. The European Commission also proposed enhancing information available to consumers to prevent food waste while further developing its Raw Materials Information System. The Package implementation was supported by funding from European Structural and Horizon 2020 programmes and a commitment to up to five ‘innovation deals’, ‘pragmatic and flexible’ collaborative solutions to specific regulatory obstacles (European Commission 2016), although only two such deals have been signed to-date. Finally, plastics recycling was identified as an area for further policy development.

The adoption of several measures accompanied implementation of the initial Action Plan. In 2017, the European Commission listed its attainment of Action Plan ‘key deliverables’ aimed at covering ‘the full value chain, from production to consumption, waste management and use of secondary raw materials’, which included new legislative proposals for the online sale of goods and fertiliser production plus actions on eco-design, food waste, waste-to-energy, waste electrical and electronic equipment and financing for the circular economy (European Commission 2017, p. 3). A revised Circular Economy Package further expanded this initial policy portfolio in 2018, featuring several policy instruments (European Commission 2018a). Legislative measures included amendments to existing directives for waste (2008/98/EC), landfill (1999/31/EC), end-of-life vehicles (2000/53/EC), WEEE (2012/19/EU), and batteries and accumulators (2006/66/EC). The EU Strategy for Plastics in the Circular Economy 2018 subsequently set out further regulation for reducing plastic wastes (European Commission 2018b). The EU will also adopt additional rules for: enhancing the recycling of plastics, through a revised Packaging and Waste Packaging Directive (European Communities 1994); littering at sea via amendments to the

Directive on Port Reception Facilities for ship-generated waste (2000/59/EC); reducing microplastics usage; and single-use plastic consumption. In addition, €100 million from Horizon 2020 funds was also made available for further CE research up to 2020 (European Commission 2018b). The European Circular Economy Stakeholder Platform was then established to provide ‘a virtual open space ... facilitating policy dialogue among stakeholders and ... disseminating activities, information, and good practices’ (European Commission 2018a). Network members include external organisations hosted within the European Economic and Social Committee.

Analysis: packaging, conversion, layering or patching?

Returning to the categories developed in Figure 1, we have shown the effects of reframing and repurposing policy tools over time. Viewed as a snapshot in time, without reference to the legacy of ideas and action that preceded it, the current policy appears to represent a novel, innovative portfolio of instruments that has largely superseded pre-existing institutional frameworks, i.e. ‘packaging’. To an extent, we could understand the EU Circular Economy Package in these terms with new rules, for example, on reducing plastic use and wastes giving the impression of an ambitious ‘packaged’ approach. Additional funding for research and business innovation, the multi-stakeholder platform and support for business also endorse this view. Nevertheless, inspection of the historical evolution of this policy challenges such interpretations.

The historical account above shows that, rather than packaging or conversion, institutional change in the CE portfolio may be more indicative of incremental layering. Howlett *et al.* (2015, p. 291) argue that ‘new policy design’ studies understand policy mixes or portfolios as resulting from temporal processes of institutionalisation. While one could suggest some conversion of pre-existing EU resource and waste policy to support the circular economy agenda, this view of change is problematic since the overall policy *objectives* remain largely the same. More significantly, analysis of the Circular Economy Package shows that it layers new instruments over this long-established institutional framework without radically repurposing the original instruments’ objectives. Pierson’s 2004 notion of path dependence through positive feedback is instructive here; through self-reinforcement in political processes, ‘the probability of further steps along the same path increases’ (Pierson 2004), p. 21) restricting radical alteration of policies. Institutions become ‘locked-in’, constraining the space for significant innovation (see also Thelen 2004, Howlett 2009, Howlett *et al.* 2015, Fitch-Roy *et al.* 2019). In this way, conceptual framing of the closed-loop economy by European institutions in the 1970s supported the initial expansion of policy through adoption of several directives. Rather than replacing this institutional framework to confront new challenges, the European Commission

then employed reframing as a self-reinforcement strategy around sustainable development norms, to introduce more instruments. Finally, the EU has used conceptual reframing around the current circular economy agenda as a form of positive feedback to support further incremental policy development, with seemingly little critical reflection on the implementation effectiveness of prior policies, which has proved variable (e.g. Mazzanti and Zoboli 2008). While historical institutionalists emphasise endogenous design factors, the policy ‘design spaces’ (Howlett *et al.* 2015, p. 300) in portfolio development, constraining exogenous environments may also be significant. Competitiveness concerns, embodied in the Europe 2020 strategy, economic crisis, and rising populist politics certainly have narrowed the European Commission’s manoeuvrability for radical institutional innovation. We could view the result as classic layering, as Thelen envisaged.

The Circular Economy Package also exhibits limited ‘patching’, whereby policy designers ‘can issue “patches” to correct flaws in existing mixes or allow them to adapt to changing circumstances’ (Howlett *et al.* 2015, p. 300). Such patches, on the basis of EU circular economy policy, can be reactive or proactive. More reactive approaches are visible in the Strategy for Plastics. Here, a conspicuous ‘policy window’ (Kingdon 1984) has opened in political discourse globally around risks from plastics pollution², with policymakers under pressure to respond to shifting environmental norms (Dauvergne, 2018). Again reflecting the path dependency of EU policy, the instruments introduced in 2018 effectively ‘patched’ the new Package on to the existing framework. Rather than draft substantive new legislation, the Commission has made limited amendments to numerous pre-existing waste management directives. Proactive patching is also evident. Funding commitments for the circular economy are made under established structural and research programmes, with the EU making additional long-term investments in innovation around product design and waste management. The multi-stakeholder Platform process also builds upon the network structures provided by the EU’s European Economic and Social Committee, in order to inform policy development.

Conclusions

Analysis shows that, despite its expressed ‘ambitious’ objectives and limited instrument innovation, the EU’s Circular Economy Package exhibits a significant policy legacy of pre-existing institutional frameworks dating back to the 1970s. Evident layering and patching of measures also reflects the evolution of the CE concept, which has been subjected to successive waves of reframing from closed-loop thinking to sustainable resource use to the current circular economy incarnation. This conceptual recycling by the EU has significantly expanded the available design space to accommodate continued institutional expansion. However, the widely touted innovation of the current policy

package is questionable. In this case, referencing back to the arguments of Rittberger and Richardson (2003), the Commission has conceptually reframed the 1970s vintage ‘old wine’ of closed-loop thinking into the ‘new bottle’ of the Circular Economy Package, to generate another phase in portfolio development.

Given this pattern, can incremental institutional adjustment over time then deliver on the goals of the CE, or does it require genuinely new policy? The modest degree of genuine policy innovation we observe in the EU case certainly supports a view of CE as an ‘economically and politically palatable response to aspirations for sustainable growth’ (Hobson and Lynch 2016, p. 17), rather than the genuinely paradigmatic shift some have portrayed it as. The patchy record of past EU policy incrementalism in achieving non-linear sustainable resource use and waste management outcomes would also support the point that the current package is unlikely to generate the degrees of social, economic and technological change necessitated by the CE. Indeed, arguments for developing closed-loop economies in Europe, particularly around improving resource use and waste management, are as valid now as there were in the 1970s (see Stahel 2016), suggesting past incrementalism has largely failed to effect system-wide change. While the Circular Economy Package is relatively new and it is too early to evaluate its impact, the pattern of incremental change revealed by historical analysis does not appear commensurate with the transformational nature and society-wide scope of the challenge. Given the array of constraints that CE implementation faces (Kirchherr *et al.* 2018), successfully disrupting the deeply entrenched, unsustainable patterns of production and consumption requires, in our view, altogether more radical approaches to EU policy design than CE proponents currently acknowledge. In this regard, questions about whether or not CE is a ‘good’ policy idea are deeply entwined with questions about whether the current system of EU governance can deliver the public policy tools to implement it. The historical account we provide in this contribution does not offer cause for great optimism.

Further research could therefore take several pathways, in the EU and beyond. Firstly, we argue for active debate on better integrating the goals of the CE into EU strategic level decision-making through new governance approaches. A critical point for consideration is to how best to enhance CE policy ‘coherence’ (Benson and Lorenzoni 2017) or ‘coordination’ (Jordan and Schout 2006) across multiple sectors and levels of governance (Howlett *et al.* 2017). Achieving these goals logically requires integration of its principles into non-environmental policymaking sectors such as industrial production, trade, energy and agriculture where the upstream and downstream determinants of unsustainable resource use decisions invariably reside. We suggest that this is a more formidable task than the ‘win-win’ narrative in which radical change follows from ‘common sense’ implies (Korhonen *et al.* 2018, p. 45).

Disrupting the entire EU economy in the way that CE envisages requires bold, innovative approaches to almost *all* future policy design that take, as

a starting point, non-linearity or circularity as a core objective. While the case for some form of circular economy integration is then compelling, we note that the EU's long-established attempts at strategic 'mainstreaming' sustainability concerns through Environmental Policy Integration (EPI) are hardly impressive (Lenschow 2002, Jordan *et al.* 2009). Considered reflection on the scale, implications and political achievability of such a monumental project would consequently be of value to CE proponents and policymakers alike, as would the extent to which 'integrated policy-making' (Wu *et al.* 2010, p.100–108) is realistically possible. The withdrawal of the 2014 CE Directive and its relaunch in 2015 perhaps foreshadows some of the political challenges ahead. This point is especially pertinent in light of some of the existential challenges dominating the EU policy agenda on which environmental issues appear to have passed their zenith (Zito *et al.* 2019).

The pursuit of such innovation creates an important role for comparative multi-level research into the effectiveness of CE policy portfolios, their constituent instruments and cross-sector strategic coordination, which, despite a plethora of single-case analyses (e.g. Mathews and Tan 2011, Van Eygen *et al.* 2018), is under-developed. The rapid growth in CE policy portfolios worldwide, particularly in Europe and Asia, provides potentially instructive examples (Benson and Monciardini 2018), and research might inform policy learning as the circular economy concept continues to inspire policymaking globally.

Notes

1. Reduce, reuse and recycle.
2. The origins of this paradigm shift are diverse although it is typified by the so-called 'Blue Planet' effect resulting from interventions such as the BBC's high-lighting of the issue in its nature programming (Schröder and Chillcott 2019, p. 45).

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