

## Research article

## Circular economy running in circles? A discourse analysis of shifts in ideas of circularity in Swedish environmental policy

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## ABSTRACT

Circular economy has in recent years been promoted as a promising alternative to unsustainable production systems. By comparing two different concepts of circularity, circular economy and eco-cycle, which had political momentum in Sweden during the 2010s and the 1990s respectively, the paper shows how issues of responsibility, politics, limits, space and sustainability, and even the shape of the circle itself have changed over the turn of the millennium. Based on a discourse analysis of two policy reports on the concepts, a strong and a weak interpretation of circularity are identified. A weak circularity, represented in circular economy, is presumably without limits. Secondary resources shall only complement the growing extraction of primary resources, while the responsibility for circularity is handed over from the state to individuals and entrepreneurs. A weak circularity excludes social responsibility and tends to reinforce unequal power relations. With a strong conceptualization of circularity, on the other hand, the producers and the state are responsible for creating a closed, material loop limited in size and space, based on the principle of fair distribution of resources. Drawing on the findings, alternative directions of circulation are called for, which are more globally oriented and socially inclusive.

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## 1. Introduction

How the multiple and entangled environmental crises of climate change, pollution and loss of biodiversity should be tackled is under negotiation. In recent years, the economic and environmental potential of a circular economy has been promoted as a promising solution to these crises by industrial actors and private consultant agencies (EMF, 2017). In response, supranational organisations (EU, 2015), governments (China, 2008) and multinational companies (IKEA, 2017) are launching an increasing number of strategies and policies outlining the potential of a transformed and more circular production system. In parallel to an increasing research interest in the realisation of a circular economy, a critical discussion on the concept is taking place. This discussion takes an interest in revealing assumptions and the myriad of ideologies, languages, politics, structures and networks that play a role in the realisation of a circular economy (Camacho-Otero et al., 2018; Ek and Johansson, 2020).

A circular economy is the transition from linear to circular material flows, where resources once taken from nature stay in the

economy as long as possible. In a circular economy, technical, legal and semantic processes transform waste into resources to increase the lifetime of raw material. Hence, waste does not exist in a circular economy. A circular economy can thus, just like landfilling, be understood as an ideological strategy (Hird et al., 2014) that takes focus away from waste and its underlying causes, including ever-growing consumption (Corvellec, 2019).

The transition from linear value chains of finite resources to circular value chains of endless resources provides the material conditions for continued economic growth, while reducing the environmental impact from resource use. Thereby, the idea of a circular economy rests on the assumption that a market-based economy can enter into an efficient and successful alliance with the environment, maintaining current relations of power, politics and norms (Gregson et al., 2015; Hobson and Lynch, 2016).

A circular economy is often presented as a practical strategy for implementing sustainable development (Geissdoerfer et al., 2017). However, a circular economy as it is most commonly envisioned focuses primarily on the ecological and economic dimensions of sustainable development, thus overlooking the social-ethical dimension (Inigo & Blok, 2019). Furthermore, the positive ecological and economic effect of a circular economy appears to be based on “faith rather than on fact” (Corvellec et al., 2020). For exam-

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ple, quantitative studies demonstrating a positive environmental effect assume that circulation substitutes for extraction of the corresponding raw material from nature, an assumption that is not always correct (Gregson et al., 2013; Geyer et al., 2016).

The implementation of circular economy is often based on creating business opportunities from practices of care such as repair and reuse, which have traditionally been performed at home or on a small scale (Isenhour & Reno, 2019). At the same time, when implemented in companies, a circular economy tends to become merely a side activity to the linear core business (Stål and Corvellec, 2018). Thus, how the transition towards a circular economy should be realised is uncertain. In particular, analyses of power relations and equity issues related to circular economy are scarce (Camacho-Otero et al., 2018), although environmental justice as a discipline developed from studies of waste management and the disproportionate siting of toxic waste facilities (Chavis and Lee, 1987).

The previous critique of circular economy is based on an implicit understanding of circularity as constituting one coherent discourse, a stable paradigm (Geissdoerfer et al., 2017). This is despite the fact that circular economy is presented as a contested concept (Korhonen et al., 2018a), with a fragmented definition (Kirchherr et al., 2017), which absorbs rather than emits meaning (Valenzuela and Böhm, 2017). Hence, a critical approach to circular economy that is open to different conceptual understandings of this concept is not only missing but also clearly needed.

Going back in the records shows that circularity has been promoted in different contexts and times. For example, the environmental economist Kenneth Boulding (1966) stated in his essay *The Economics of the Coming Spaceship Earth* that the Earth's resources are limited, just like in a spaceship, and that humans need to switch to "cyclical ecological systems". In the awakening of industrial ecology, the engineers Frosch and Gallopoulos (1989) were inspired by nature, rather than space, when they proposed that materials and energy should circulate in *closed loops* similar to ecosystems.

Recognising that circularity is not a new idea opens opportunities to see how its discursive formations have changed over time through different conceptualisations of it. Previous discourse analyses (e.g. Henriksson et al., 2019) have demonstrated that dominant discursive formations have major impacts on policy and environmental action for several years to come. Hence, it is important now to critically reflect on and discuss circularity. Discourse analysis is a powerful tool that can open up concepts for such critical reflection by uncovering and analysing alternative ideas, interpretations and understandings (cf. Lancaster et al., 2015).

Situating such a study in Sweden opens a distinct possibility. While the idea of *circular economy* has gained attention in policy and business circles in the country since the mid-2010s, a concept similar to circular economy, *kretslopp* (eco-cycle), acquired major political momentum in Sweden during the 1990s. *Kretslopp*, or *kreislauf* in German and *kringloop* in Dutch, can be translated literally into English as "circuit loop" or "eco loop". Hereafter we will refer to the Swedish concept of "kretslopp" as "eco-cycle", in line with Lundqvist (2004). Furthermore, nearly three decades of a strong belief in a sustained green growth through technical progress and managerial skills have shaped an image of Sweden as an environmentally progressive country (Anshelm and Hultman, 2015; Hysing, 2014). The output of Swedish environmental policy and politics will probably have a strong impact on what will be regarded as both radical and viable solutions to the environmental crisis. This makes Swedish circular economy policy important for further study.

The purpose of this study is to examine and critically discuss the current discursive framing of circular economy policies and see how these visions differ from previous visions for circularity in the

same national context. Thereby, we initiate a discussion about how circularity is presently understood and could be understood differently. We are specifically interested in how circularity is envisioned to come to terms with environmental problems, social aspects of these issues, and what kind of power dimensions are implicit in different versions of circularity. By a comparative policy analysis of two Swedish government reports targeting circularity, this paper highlights that the circularity concepts represented in the reports may appear similar, but that assumptions, premises, responsibilities, problem formulations and the understanding of the circle in itself have shifted over time, and thus different outcomes can be expected of the policies.

The paper is structured as follows: first we introduce the theoretical framing of the analysis, highlighting the political context and processes that have shaped environmental governance over the past decades. We then introduce our empirical material and the discourse analysis framework we have used to analyse it. A presentation of the analysis follows, and is, finally, discussed in relation to previous research and key analytical concepts.

## 2. Theoretical framing

Our aim is to shed light on the process of meaning-making in relation to circularity. We study this in the political realm, where modes of 'green' governance (Scoones, Leach and Newell, 2015) are under discussion. Green governance encompasses different forms of politics with the ambition to reach sustainable futures. Analysis of such politics evokes questions such as who should govern whom, what should be governed, and on what grounds. Ever since the 1987 *Report of the World Commission on the Environment and Development: Our Common Future*, sustainable development has been a key concept around which green governance has evolved. The report popularised a triple bottom line model of sustainability, in which the economic development (profit), social development (people) and environmental protection (planet) for future generations had to coevolve. However, not all interpretations of sustainability align with the triple bottom line model. Jacobs (1999) therefore distinguishes between a *strong* and a *weak* conceptualisation of sustainable development. Weak sustainability can be described as a business-as-usual approach, which assumes there are no conflicts among economic growth, social equity and ecological limits, while on the other hand, radical or *strong* sustainable development would be based on living within the environmental limits and call for the need to include issues of equity and social justice.

In this paper, we are interested in what versions of sustainability are imagined to be achieved through circulation policies. Building on Jacobs (1999) we will interpret different framings of circularity as weak or strong. To discuss and elaborate on the differences between weak and strong conceptualization, we make theoretical use of three concepts, identified in critical environmental theory, that have had an impact on green governance in the last few decades: marketisation, ecological modernisation, and individualisation.

The rationales for state interventions vary according to the ideological lens through which the state is viewed. The welfare state model, that seeks to guarantee social values such as justice or sustainability, argues for state-led reforms, while neo-liberal models emphasise market-led solutions and innovations to deliver these values (Rhodes, 2007). Since the 1980s, the provision of public services has increasingly been performed by private actors in most parts of the world (Birch and Siemiatycki, 2015; Clarke, 2004; Graham and Marvin, 2001). This process has been described as *marketisation* and explains the focus on entrepreneurship, private-public partnerships and coordination that permeate public policy, including sustainability policies (Castree, 2008). Mazzucato (2015) points out that this process is legitimised by the idea that

the state is too large to be effective and as a consequence should primarily promote private sector-led innovation through subsidies and tax reductions and similar incitements. Opposing these ideas, Mazzucato (Ibid.) proposes that the state should be a key partner in sustainability issues, instead of a ‘meddler’ or ‘facilitator’ of growth. Thereby, it can guarantee social and economic as well as ecological sustainability.

The belief that innovation and thus transformation best occur through entrepreneurial action of market actors and through consumer responsibility have been analysed by applying the concept *ecological modernisation* (Hajer, 1995). The core feature of ecological modernisation is the conviction that environmental problems can, and should, be solved within the existing economic system. No radical systemic changes are needed to tackle pressing sustainability issues. Rather, these problems should be addressed through market mechanisms, innovations and technological solutions (Hajer, 1995). The idea that environmental degradation can be ‘decoupled’ from economic growth – so that economic growth does not lead to increased natural resource consumption, pollution or emissions of greenhouse gases – is central to ecological modernisation (Mol, 2002). Since the 1980s and 90s ecological modernisation has come to dominate political and public environmental discourse globally (Hajer, 1995; Anshelm and Hultman, 2015). Depictions of circular economy in scholarly literature typically mobilise ideals of ecological modernisation (Hobson and Lynch, 2016): increased circularity of material flows is expected to enable decoupling, and thereby continued economic growth with a reduced negative impact on the environment. This is to be made possible through using technological innovation as a governance tool, which also can be read as a weak conceptualisation of sustainability (Jacobs 1999)

In parallel to ecological modernisation, we see a process of *individualisation*, where the responsibility for societal change has moved not only from the state to private enterprises, but also to the individual in her role as consumer rather than as citizen (Hobson, 2013). In relation to research about circular economy, this discussion has mainly focused on the revived role of consumers as being integrated in the production system, a role that has been termed *prosumer* (Ritzer et al., 2012). However, the relation between circular economy and individualisation has been suggested as an important theme for further research (Mylan et al., 2016; Camacho-Otero et al., 2018). It is important to highlight that the individualisation process not only presumes that it is through individual rather than governmental action that transition to sustainability should occur, but it also reinforces uneven power relations. Not everyone can afford to take on environmental responsibility and adopt an “eco-friendly lifestyle” through consumer choices (Bradley, 2009). A consequence of a strong discursive focus on the individual is that less privileged groups will not be regarded as active and moral subjects on the same terms as more economically or culturally privileged groups (Bradley, 2009; Henriksson, 2019).

Moreover, we want to highlight how policy can affect different societal groups differently, and we also wish to show what issues and which subjectivities are included or excluded as consequences of different policy framings (Kajiser and Kronsell, 2014). Kronsell (2017) argues that while these issues have not gained enough attention in mainstream environmental analysis, a feminist constructivist perspective have the potential to further explore such inquiries and is suitable for critical investigations of the foundation of environmental governance. Furthermore, a feminist perspective points to how conflicts between economic growth and uneven socio-economic development are generally not the main focus of environmental policy, nor of analysis of the same (Elmhirst, 2011). Exploring how symbols such as the circle are used in different settings sheds light upon power relations and is political per se (Haraway, 1991; Hird, 2012). What kind of possibil-

ities for environmental justice or social sustainability the circle metaphor offers, will be an important theme of the following analysis.

### 3. Materials and method

For the analysis of policy documents that focus on circularity, we adopt a critical stance towards policy, and use discourse analysis as a methodological tool. The constructivist environmental tradition recognises policy as socially, culturally and historically situated. Concepts such as sustainability and circularity are contested, which means that struggles are taking place over their meaning, interpretation and implementation. The contribution of this approach is its ability to trace the power struggles underlying environmental politics (Hajer & Versteeg, 2005; Mottier, 2001). Inspired by a constructivist approach to policy, we do not regard the problems and solutions stated in the policies as given. By their way of framing and discussing particular themes and phenomena, and through using specific language, categories and concepts, policies reflect and reproduce certain discourses (Foucault, 1976). Through discourse, particular knowledge claims become naturalised and seem obvious. Some arguments are given meaning, and some actions become possible and others impossible, which produces a certain political ‘truth’ in terms of policy response (Hajer & Versteeg, 2005). We are especially inspired by Carol Bacchi’s approach to policy analysis, which takes as a point of departure that policy is socially constructed. To scrutinise suggested solutions to a problem reveals what is suggested as the cause of an identified policy ‘problem’ (Bacchi, 1999:22). The power struggle of problem definitions, especially when it comes to sensitive policy issues, is always present but seldom explicit, and can be traced in analyses of suggested solutions. How a problem is represented has far-reaching effects for what actions are considered for coming to terms with it. This specific methodological approach seeks to identify how problems are represented by careful and detailed readings of the documents at hand. Inspired by Bacchi (2012:2), we have formulated a set of questions which have guided the analysis, namely:

- 1) What problems are the reports aiming to solve?
- 2) What kinds of solutions are suggested as a consequence of these problem representations?
- 3) Who are designated as responsible for implementing the solutions?
- 4) What is left unproblematic in the identified problem representations?

The present work is based on text analysis of two policy reports on circulation commissioned by the Swedish government. These two policy reports were selected since they evaluate two conceptualisations of circularity – *circular economy* and the *eco-cycle*, respectively. We acknowledge that a text analysis based on only two documents might appear to be limited when aiming to describe changes in the circularity discourse. However, the advantage of basing the discourse analysis on these two reports is their similar policy status. They are produced at two distinct periods of time where both are seeking to articulate a position on circularity (i.e. Lancaster et al., 2015:624) To compare these documents offers a possibility to symmetrically analyse and compare similar themes and subjects from two different origins. Thereby, changes in the discourse of circularity can be revealed.

The Circular Economy report (henceforth referred to as “the CE report”), *From a value chain to a value circle* (377 pages), was released in 2017 and is partly a response to the EU’s (EU, 2015) circular economy action plan, which calls for national implementation of measures to achieve a more circular economy. The CE

report was produced on commission from the Swedish government “to investigate and propose policy instruments to prevent the generation of waste in order to promote a circular economy” (Alterà, 2017). This commission was assigned to a group of experts selected by the government.

In the report, circular economy is defined as “an economy where waste in principle is not generated, [...] and the value of products, materials and resources is retained in the economy as long as possible (2017:78). Circular economy builds according to the report (2017:167–173) on the following political principles: (I) the EU’s (EU 2008) waste hierarchy, ranking the least to the most favourable waste management options; (II) Swedish Government (2010) Environmental Quality Objectives, including policy targets for increased collection and recycling of household waste; (III) the UN’s (2015) Sustainable Development Goals, emphasising Goal 12, sustainable consumption and production, with a focus on prevention and reuse.

The eco-cycle report, *Strategy for adopting materials and goods to eco-cycles* (431 pages), was published 20 years earlier in 1997, and written by the government-appointed Swedish delegation for eco-cycles (Swe: Kretsloppsdelegationen). The background of the report should be understood in the light of Sweden’s membership of the EU in 1995. The space for landfilling was decreasing in many member states, which shifted the policy focus from landfilling towards recycling (cf. EU, 1996). The commission from the Swedish government to the delegation was, among other things, to design a strategy for circularity and to assist the government in investigating and developing policy instruments for eco-cycles.

According to the report, an eco-cycle is reached when “what is extracted from nature is sustainably used, reused, recycled or finally disposed of with the least possible resource consumption” (Ecocycle Commission, 1997:48). The most important political principles for the eco-cycle (1997: 47–50) are according to the report: (I) the UN’s (1992) Declaration on Sustainable Development, which describes concern about people in other countries and the future; (II) Factor 10, which calls for increasing resource efficiency by a factor of 10 (Schmidt-Bleek & Bierter, 1998); (III) the precautionary principle, emphasising the focus on sources and early action to prevent problems in the future (EU, 1992).

Both reports form the basis for decision-making by describing ongoing discussions relevant to the respective circularity concepts, identifying underlying political contexts, principles, and problems, analysing the potential and current status of circularity, and suggesting policy instruments as well as potential barriers to and opportunities for implementation. The notion of sustainable development is present in both reports and posed as a main objective. One difference between the reports is that the eco-cycle report is more freely formulated and contains a vision of the circular society in 2022. The CE report, on the other hand, is more concise and contains proposals on how the legal text of the new instruments could be formulated. The report on eco-cycles however discusses possible policy instruments.

The analysis of the public reports was conducted jointly by the authors. First, the reports were analysed by each author by revealing the basic elements and the underlying meanings of those elements. Bacchi’s (2012) guidance for discourse analysis of policy inspired the analysis through directing focus onto how the main problems were formulated, their underlying logic, potential effects, what actions should be undertaken by whom and how, and what was neglected or made invisible. Based on the analyses, we identified several key themes in the respective reports, and these themes structure the following sections. In the analyses, quotes from the reports are used to exemplify our line of argumentation. The quotes are translated from Swedish by the authors. Comparing the discursive formations between the CE report and the eco-cycle report makes it possible to reason about silences, different versions

of sustainability, as well as different understandings and reproductions of power dimensions.

## 4. Analysis

In the following, we will compare the concepts of circular economy and eco-cycles as they are represented in the studied reports. Although the reports show many similarities, there are also important thematic differences between them, which have become clear through the discourse analysis. We will describe these differences through six themes: the shape, size and space of the circle in which materials are imagined to circulate, how sustainability is conceptualised, which subjects are imagined to affect or be affected by circularity practices, and, lastly, the role of the state as a governing body in a circular future.

### 4.1. The shape of the circle

While both reports argue that the linear material flows described as “take-make-dispose” (Alterà, 2017:69) are the root cause of the current unsustainable situation, they differ in the description of the problem of the linear economy. In the eco-cycle report, both the first phase in the linear economy, the extraction of natural resources, and the last phase, the outflow of resources from the economy – i.e. waste management – are problematised:

“Large and linear material flows put pressure on the environment at all stages – from extraction, production, transport and use to waste” (Ecocycle Commission, 1997:47)

To achieve an eco-cycle, the report argues, it is important to reduce the use and extraction of primary material from the Earth’s crust, and replace it with secondary materials in a closed loop; “Inflows and outflows should be minimized” (1997:361). In the eco-cycle report, suggested measures to curve the linear towards circular flows thus target both the inflow (p.48) and the outflow (p.198) to the economy. This interpretation of circularity resulted in the implementation of one of the few specified taxes on mining in Sweden (SCS, 1995) as well as a landfill tax (SCS, 1999).

In the CE report, on the other hand, it is only the last phase, the outflow of resources, which is problematised and the focus of action. The inflow to the economy, i.e. natural resource extraction, is not problematised.

“The reserves of minerals are in most cases still large and the minerals extracted from the earth’s crust do not disappear [...] The basic problem is that all material handled in the economy tends to spread sooner or later. It mixes and dilutes [...] ends up in the wrong places. (2017:73)”

So in a circular economy, the use of secondary materials is imagined to increase, but this is not mentioned in terms of substituting primary raw material. The inflow to the economy, i.e. the extraction from the Earth’s crust, is thus assumed to continue in a circular economy (see Fig. 1). The proposed measures are in line with this focus on the outflow from the economy, seeking to prolong the lifespan of products through, for example, tax deductions on reparations. This is also echoed in the EU’s (EU, 2015) circular economy action plan, where only targets and measures for increased circulation are presented.

### 4.2. The size of the circle

The two reports relate differently to ecological limits. In the eco-cycle report, the boundaries of nature are presented as delimiting the circulation of material. Resource scarcity is regarded as a reality, which also applies to resources that exist in enormous

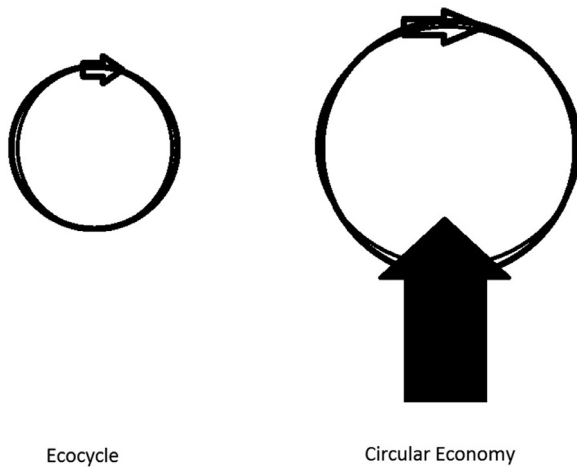


Fig. 1. Visualisation of the circle in the eco-cycle and the circular economy.

global reserves as “the climate effects [of mining] will pose limits before any scarcity becomes noticeable” (1997:53). To fuel the eco-cycle a transition to renewable energy is desirable, the report argues, but it also points out that this transition is limited by its material needs, for example “land and materials [are required] to utilise solar energy and are (...) scarce” (p.31).

A key problem identified in the eco-cycle report is the size of material flows: “an ongoing increase in anything – the number of people, the amount of energy used, the amount of sugar produced or the accumulated amount of zinc – sooner or later leads to collapse” (1997:71). Achieving an eco-cycle thus requires “moderate consumption” (p.239), where consumption and production are stabilised to close the loop.

In the CE report on the other hand, few limitations are present. Problems related to resource extraction, consumption and production are excluded. Waste is framed as the main problem in the CE report, or more precisely the inefficient handling of waste. When materials end up in the wrong places, important “ecosystems are damaged” (2017:70) and “the economic value [of the material] is lost” (p. 99). That “circular, renewable energy” (p. 18) is represented as infinite means that the inflow of energy is not problematised. The only thing that should be limited in a circular economy is the outflow from the economy, by redirecting waste back to the economy.

#### 4.3. The geographic scale of the circle

Both reports address the geographic scale of material flows but differ in how large the spatial circles should be. The material flows, according to the eco-cycle report, should primarily be local. The eco-cycle is based on a market where “the local brewery, the dairy and the slaughterhouse are back” (1997:26), with restrictions on, for example, “physical travel” (p.25). The material flow in an eco-cycle thus primarily consists of many small-scale local loops.

The CE report, on the other hand, regards secondary material as a commodity on the global market, which should flow globally, similar to primary raw materials, without unnecessary legal obstacles. A central purpose for a circular economy expressed in the report is to “create [...] new export opportunities” (2017:139). One problem identified in the CE report is that “electronic companies are prevented from sending products to other countries for repair because [they are] defined as waste and thus heavily regulated” (p.180).

#### 4.4. The spatial focus of circulation

However, while the flow is presented to be global, the CE report formulates the problem and benefits mainly on a local basis. For example, the problem with the linear economy is the local environmental impacts from the outflow such as “leaching phosphorus” (2017:70). This phosphorus ends up in the wrong places and “contributes to eutrophication” (p.70). The benefits include local opportunities for “circular” work, and securing a local resource supply within the EU (cf. Gregson et al., 2015).

The report on eco-cycles, on the other hand, acknowledges global inequality, assuming that the problem of linear flows is global, and results from the unfair distribution of resources between countries. This is illustrated by the fact that “20% of the world’s population consumes 80% of the world’s resources” (1997:60). It is argued that Sweden, along with other developed countries with high levels of consumption, has a special responsibility to become more resource efficient.

#### 4.5. Sustainability and Sweden’s position in circulation

Going circular is suggested in both reports as a way of reaching sustainable development in practice. Although the reports both emphasise sustainable development, they do it in different ways. In the eco-cycle report, sustainability is represented as a balance between the triple bottom line of economic, social and ecological sustainability. Economic development is recognised as vital, but “the ecological system is a prerequisite for continued life, and humans therefore need to adapt to the limits set by nature” (1997:48). The vision in the report is referred to as the “eco-cycle **society**” (1997:27; emphasis by the authors), stressing that circular material cycles is a strategy for start building a society based on solidarity and equality, both intragenerational and intergenerational: “A more just and equal distribution of material resources is necessary – globally, within countries and between generations” (p. 22). For example, the argument for reducing mining is, apart from the environmental benefits, to “save resources for future generations” (p. 70).

In the CE report, on the other hand, attention is given to the potential of the circle to create win-win situations for the economy and the environment “creating a bridge between business and environmental politics” (2017:123). The projected end result is a circular **economy**, where circulation is understood as primarily economic, based on a market logic. Developing circular business models is argued to strengthen “Swedish competitiveness” (p.15), to create “new possibilities for export” (p. 139), “create economic growth” (p. 81), and at the same time “reduce carbon dioxide emissions” (p. 26).

The social benefits of a circular economy are expressed in the CE report in market terms; job creation with a “positive effects on integration as [...] many tasks do not require [good knowledge of] Swedish” (2017:313). Furthermore, the report asserts that to “develop and export circular and sustainable innovation [is the] most important contribution Sweden can make to the world” (p. 140).

#### 4.6. The responsibility of stakeholders in circulation

The actors that are given responsibility for circulation differ between the reports. A number of actions are suggested in the eco-cycle report including educational activities and taxes on fossil fuels. However, the measure in focus is the extended producer responsibility. This measure attributes responsibility for circulation to producers. In practice, this entails a suggested “take back obligation” (1997:12): The responsibility of consumers is explicitly said to be secondary in relation to that of producers in the eco-cycle report. While the delegation argues that consumer demand is an

**Table 1**  
Overview of how circulation is constructed in the eco-cycle report and the CE report.

	Theme	Eco-cycle	Circular economy
The circle	Shape	Closed inflow and outflow	Closed outflow
	Size	Limited	Expanding
	Geographical scale	Local	Global
Circulation	Spatial focus	Global concerns	Local concerns
	Sustainability	Environmental and social	Environmental and economic
	Sweden's position	Resource allocation	Export possibilities
	Responsible subjects	Producers, the state	Users, entrepreneurs
	State's role	Leadership	Enabler

important message for the market that can trigger transitional action, they state that in reality consumers have little ability to impact product design.

The selection of actions in the CE report includes different measures for increasing reuse, such as a tax deduction for reparations, increased access to car pools, strengthened rights to complain about deficient products, and increased trust and legality in second-hand markets. Notably, the suggested actions target households and individual consumers, while none of them directly targets producers. It is thus a specific type of waste that is circulated, i.e. waste close to households, as stated in the report: “focus on products intended for the consumer market” (2017:193). This means that a specific responsibility for realising the circular economy is assigned to households and individuals. The role of individuals and consumers is so central in this new economy that their role is redefined: we “should speak about *users* rather than consumers” (p.16, italics in the original).

In the CE report, the industry is attributed an indirect responsibility for achieving a circular economy, where “circular entrepreneurship” (2017:93) should develop “circular (...) innovation” (p.143), and “circular business models” (p.150). The industry should offer “circular solutions” (p.148), which in different ways enable products to be circulated through re-using or recycling practices. The market is thus assigned responsibility for creating possibilities for circular consumer behaviour.

#### 4.7. The state's role in circulation

The role assigned to politics to achieve circulation also differs between the reports. In the eco-cycle report, it is argued that “authorities are responsible for (...) driving the transition” (1997:301) towards an eco-cycle society by setting guidelines for the public and private sectors. The state should take lead in the transformation. The main role of the state should be to define equal but strict requirements of companies. Legislation is identified as the “most important driving force for companies [to change, because] volunteering is not to be trusted” (p. 91). The advantage of legislation is considered to be to “promote forerunners and push laggards” (p. 85) and force those commercial actors who do not by themselves take measures to adapt.

In the CE report, the state is represented as either an inherent obstacle or as a facilitator for the other actors. An identified problem is the lock-in of legislation in a linear economy. For example, the waste monopoly is seen to prevent companies from gaining ownership and control over resources, which “constitutes a real obstacle to innovation and market development” (2017:186) for a circular economy. On the other hand, the state is given the role of supporting market initiatives through soft instruments, for example in the form of tax deductions on reparation and “reserving street areas for car pools” (p. 199).

Summing up the analysis, we have identified how both the studied reports define linearity as a problem that circularity as a concept can solve. Yet the reports define circularity as well as problems and solutions to linearity differently, where interpreta-

tions, of among other things, spatial focus and responsible subjects suggest very different interpretations of sustainability. The analysis is summarised in Table 1. How these differences can be interpreted in relation to contemporary green politics and governance will be the focus of the discussion.

## 5. Discussion

Placing the 2017 CE report alongside the eco-cycle report from 1997 shows that two different types of circulation are in play in the documents, reflecting the changes in environmental politics in a broader sense. Even if an eco-modern interpretation of sustainability has been a feature of global green politics ever since the Rio Summit in 1992, the new century has highlighted the role of the market in steering the transition even more (Anshelm & Hultman, 2015). These changes are reflected in the discursive transformation of circulation in the Swedish political context. The eco-cycle report emphasises market producer responsibility and problematises global inequality while the CE report highlights consumer responsibility and national competitiveness in the global market.

In line with these discursive changes, in this paper we have identified differences regarding the ontology of circularity, in relation to the problem formulation, the proposed solution, responsibilities, and in how the shape of the circle itself is imagined. By comparing the eco-cycle report and the CE report, we argue that the conceptualisation of circularity can be divided into a *weak* and a *strong* version, similar to what have been identified as the weak and strong opposing paradigms in the interpretation of sustainable development (cf. Jacobs, 1999). Just as with weak and a strong sustainable development, the terms ‘strong’ and ‘weak’ do not relate to the success of the implementation but to the degree of change required. Such a division of circularity meets the need to distinguish “between ideal and subverted CE definitions” (Kirchherr et al., 2017).

In the eco-cycle report, the strong version of circulation is portrayed by a closed loop, with as little inflow and outflow as possible. The flow in the circle should be limited in size by stabilised consumption, and geographically by local flows, similar to the circular vision suggested by Boulding (1966). In this strong model of circulation, the state takes the overall responsibility for the transition, while the producers are given the practical responsibility for taking back their products to enable circulation. By emphasising environmental and social perspectives in the eco-cycle, the goal of a strong circulation is a fairer and more sustainable distribution of resources, between countries and between generations.

In contrast, we argue that the CE report can generally be understood as promoting a weak circulation model, with open inflow from nature but closed outflow to nature. In such a weak circulation, the secondary resources will only complement the extraction of primary resources from the Earth's crust. The resources are unlimited, as the size of the circle will grow as more material enters and is kept in the economy. The circulated material should, just like raw material, flow around the global market. In the weak

circulation model the responsibility for circulation has been transferred from the state to individuals and entrepreneurs, as the state merely facilitates by developing incentives and removing barriers to the market. The goal of a weak circulation is more sustainable economic growth, which primarily brings local benefits such as increased competitiveness, and improved export opportunities, innovation and jobs.

There are also many similarities between the weak and the strong versions of circularity, which may be generally true for circularity models in general. Previous studies have noted that circular economy is rooted in ecological modernisation, as [Hobson and Lynch \(2016\)](#) put it; we can become “rich and green” in the transition to circularity. The connection to ecological modernisation seems to be deeply rooted in the use of the circle as a metaphor for material flows. Continuity, manifested in the perfect shape of the circle, brings a promise of an eternal flow of resources. The circle promises that conditions will continue as usual, which in a capitalist society means continued growth. But this time the growth will be cleaner and greener.

The connections to ecological modernisation as a political strategy ([Hajer, 1995](#)) differ between weak and strong circularity models. In the eco-cycle, representing strong circulation, extraction is projected to shrink drastically, to be replaced by recycling. This means a reframing of the current power structures in the resource sector. This challenging approach can be linked to the explicit foundations of the eco-cycle report, such as the Factor-10 movement, arguing for reduced resource exploitation and use ([Schmidt-Bleek & Bierter, 1998](#)). Furthermore, this indicates that the eco-cycle concept was partly influenced by radical discussions in the environmental movement such as the Factor-10 movement.

On the other hand, in the circular economy, representing a weak model of circulation, the resource extraction is projected to continue as before, in tandem with a growing recycling sector. This ambition can be linked to the political documents that are explicitly stated to be the foundation of the circular economy report, such as the [UN's \(2015\)](#) Sustainable Development Goals, where the mining sector is seen as a facilitator rather than a barrier ([UNDP et al., 2017](#)). This becomes even clearer in the contemporary strategies to ensure the supply of raw materials, such as the EU's ([EU, 2008](#)) “Raw materials initiative” and the national implementation such as the Swedish government's ([Swedish Government, 2013](#)) “mineral strategy” in which it is proposed that a strong mining sector should be developed hand in hand with a growing recycling sector (cf. [Johansson et al., 2014](#)).

Hence, the environmental movement does not appear to have had the same influence on the CE concept as the Eco-cycle concept. As [Niskanen et al \(2020\)](#) note, the concept of circular economy seems to have fallen under the radar of the environmental movement. Instead, the CE concept is based on political strategic documents and consultant reports from, for example, Ellen MacArthur Foundation. This shift is line with the marketization process, bringing focus from the political realm to the business realm, where citizens are given the apolitical role of users rather than activists that can shape transition processes ([Hobson and Lynch, 2016](#)).

Thereby, the weak conceptualisation of circularity is more in line with the idea of ecological modernisation as a political strategy, since it does not challenge business-as-usual, but rather expands it by adding business opportunities. However, the avoidance of challenging the status quo might explain the recent success of a weak circularity in terms of circular economy, as the weak conceptualisation has been widely adopted in policy ([Johansson and Corvellec, 2018](#)). This change have been noted in other areas connected to environmental politics. For example, in the energy transition, it is clear how energy policy primarily supports renewable energy, rather than closing down fossil energy production ([IEA, 2019](#)).

Since weak circularity provides a way to continue to exploit resource, it does not bring the prevailing economic model into question. However, it can be understood as setting out a new direction of economic theory, where the economy is more clearly linked to the material conditions of the earth.

As the term *circular economy* implies, the economy has a particularly strong position ([Kirchherr et al., 2017](#)), based on an assumption that economic development leads other aspects of development. A circular economy is supposed to be realised through establishing business opportunities involving practices of re-using and repairing, which have traditionally been performed in the civic sector, peer-to-peer, or in households ([Isenhour & Reno, 2019](#)). Thereby, the circular activities that previously were outside the economy, with no or low monetary admissions, should move inside the economy and generate GDP growth. This ‘marketisation’ ([Birch and Siemiatycki, 2016](#)) is particularly evident in a weak conceptualisation of circularity, where the commercialisation of circulation practices and circular business models is the main subject of inquiry.

In such a weak circularity, the responsibility for establishing circularity is left to the market, in the form of individuals and entrepreneurs. The shift in responsibility for circulation, from the government to the market, coincided with a broader political shift from government to governance at the end of the 20th century ([Rhodes, 2007](#)), corresponding to the interests of market actors. As circular economy has been left to the market to be constructed through consultants and implemented at will, an opportunity has opened up for business to use circular economy as a *corporate political strategy* to move the power from the state to the market ([Corvellec & Stål, 2019](#)), and thereby influence the political context. An illustrative example from the CE report is that circular economy is used to argue for deregulation of the waste sector ([Alterà, 2017: 186](#)), to facilitate increased circulation.

To represent consumers and entrepreneurs as the responsible subjects of circular practices reveals the close link between ‘individualisation’ ([Hobson, 2013](#)), where consumption is in the foreground of individual action, and marketisation, where entrepreneurs are assumed to attract ‘green’ consumers with smart and eco-friendly products, such as car pools and electric cars ([Henriksson et al., 2019](#)), ecological food ([Tobler et al., 2011](#)) and vintage clothes ([Appelgren, 2019](#)). These products are associated with middle class values and lifestyles, but ignore different economic positions ([Bradley, 2009](#)). On the other hand, the typical target group of traditional circularity activities such as charity shops was vulnerable people, by offering cheap products and training, and financing international aid ([Curran and Williams, 2010](#)).

In a weak circularity, some individuals, for example newly arrived immigrants ([Alterà, 2017:242](#)), are expected to provide consumers with circularity services. This is put forward as a way of including the social aspects of sustainability in the circular economy. Furthermore, in the circular global economy, the dirtiest waste reaches typically poor people in low income-countries with an expectation of getting clean resources in return ([Gregson & Crang, 2015](#)). This reflects how social class and ethnicity are used as a basis for assigning different roles to different groups of people ([Bacchi, 1999](#)). It might be possible that circular economy can generate welfare ([Fauré et al., 2019](#)) but it may also increase social inequality within and between countries. Rather than ensuring social sustainability, weak circulation may even reinforce unequal power relations.

The eco-cycle report argues for a radically different version of green governance, where relying on consumers is believed to be inefficient, partly since consumers have little impact on product design. This interpretation assigns a ‘transformative role’ ([Mazzucato, 2015](#)) to the government in the transition towards circular flows, in which the practical responsibility for creating and

upholding these flows is assigned to producers through legislation. Rather than being a corporate political strategy as the circular economy, the eco-cycle may be understood as a political strategy, where the government is in charge, adding more legislation rather than less.

The target groups of circularity activities in the eco-cycle report, such as charity shops were, as mentioned above, primarily vulnerable people, within industrial countries, but also in other, poorer countries. The fact that a small share of the global population is consuming a disproportionately large amount of the resources is regarded as a key problem in the eco-cycle report. Furthermore, local cycles, as suggested in the eco-cycle report, prevent the problem of moving low quality and hazardous waste to poorer countries. Therefore, a circular flow of material becomes part of a strategy for building a society based on solidarity and equality, where resources are allocated with both intragenerational and intergenerational fairness (Dobson, 1998). Hence, social, global and ethical issues are given considerable space in the strong circularity model.

The regulatory changes that are suggested in both reports are explained by the ecological benefits of increased circularity. However, the ecological implications of different circularity models are uncertain (Manninen et al., 2018); in the best case they are mysterious and in the worst case deceivable. The presumed positive effect of circularity presupposes that circulation of materials can substitute for the extraction of virgin resources from nature, and thereby reduce the ecological impact (Geyer et al., 2016). However, it is typically hard to trace where the circulated material ends up and thus its application, which is vital for judging its environmental effects, since it passes through many intermediaries from collection to use on the global market. At the same time, even in straightforward circulation practices, such as buying a second-hand T-shirt, the practice does not necessarily lead to the purchase of or production of a new T-shirt being avoided (Gregson et al., 2013). This is especially true in a weak circulation model, where circulation practices may only supplement the inflow of virgin material to the economy. Circulation practices may risk of becoming a side activity to the linear core business of companies (Stål and Corvellec, 2018). However, since strong circularity may increase the circulation of resources with reduced inflow of new raw material, the environmental benefits are potentially higher, at least in theory; there are problems associated with creating a perfect closed local loop and the inevitable losses of quality over time (Korhonen et al., 2018b).

## 6. Conclusion

Analysing two different discourses of circularity demonstrates that the concept can be divided into two different paradigms: *strong* and *weak* circularity. A weak circularity model, represented in common conceptualisations of circular economy, is supposedly unlimited. Re-using and recycling materials merely complement the growing extraction of primary resources, while the responsibility for circularity is handed over from the state to individuals and entrepreneurs. A weak circularity model excludes social responsibility and tends to reinforce existing power relations. In a strong conceptualisation of circularity, the producers and the state are responsible for creating a closed, material loop that is limited in size and space, based on the principle of fair distribution of resources. Hence, a strong circularity model balances tensions among ecological, economic and social priorities.

The dichotomy of weak and strong circularity can prove useful in different ways. First of all, it brings an understanding of circularity as a composition of potentially alternative underpinnings in relation to politics, symbolism, ideology, and their social and environmental effects. A framework that divides circularity into different paradigms can potentially be used to reveal underlying priori-

ties, assumptions, values, politics and thus what type of circularity occurs in a different cases.

The main point of this paper is not to argue that strong circularity, interpreted to mean that the state takes leadership, is the preferred circular future. For example, small-scale initiatives often have radical ideas on how to keep mineral resources in the ground, and can play a vital role in the green transition. However, they often suffer from lack of profitability. Thus, what is needed is a form of politics that encourages citizens' engagement beyond green consumerism, rather than top-down management.

Primarily, we hope that this paper will serve as a reminder of the instability of even the most dominant discursive framings. The current framing of circular economy promoted by consultants such as the Ellen MacArthur Foundation is not given. Circularity must not automatically aim towards economic growth, or exclude the structural causes of waste generation - the ever-increasing production and consumption - but could be globally oriented and socially inclusive to question power relations, natural resource extraction and consumption patterns. Hence, we encourage alternative directions of circulation to be developed.

While a merit of this study has been that it sheds light upon changes in circularity discourse over time, the study is limited to a text analysis of two reports. How these discourses are played out in practice is an important question for further studies, along with how discourses are interpreted by different actors such as activists, consumers, small-scale entrepreneurs, larger companies and industry. Also, analyses of different national as well as local contexts can provide further insights. Furthermore, the discursive approach can fruitfully be combined with other methodological approaches, such as case study analysis.

## Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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## Supplementary materials

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