

The Contradictions of a Clean Cobalt Commitment

An assemblage analysis of how the label of responsible cobalt sourcing enables actors to govern the local realities of the artisanal cobalt miners in the Democratic Republic of Congo



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Abstract

In the energy transition from fossil fuels to green energy technologies we are becoming increasingly dependent on several critical minerals that power these technologies, including the mineral ore of cobalt. As the cobalt reserves are highly concentrated in the southern provinces of the Democratic Republic of Congo, international interest and attention for these cobalt mines has increased significantly during the past years. Simultaneously with an increased cobalt production, public pressure on companies to make sure they do not contribute to human rights violations elsewhere has also increased. Whereas previously companies were pure economic actors, they are now seen as political actors with corporate social responsibilities as well. As a result of these developments the governance formation of the cobalt mining sector in the DRC has transformed and is now characterized by diverse actors ranging from governmental actors, international NGOs to industrial actors. These actors are all actively seeking cooperation through the common goal of making the cobalt supply chain more responsible, enabling them to conform with sustainability pressures while simultaneously being able to continue their activities and secure their cobalt supply.

In this thesis, I use the assemblage approach and more specifically Li's (2007) analytic of assemblage to unpack the underlying practices of the current governance formation. The aim of this thesis is to unveil the power relations at play and to demonstrate how certain actors determine the extent of continuation and change in the cobalt mining sector of the DRC. Whereas all actors involved are complying to a commitment to clean cobalt, this thesis demonstrates the contradictions of this dominant narrative that currently limit the actual effects on the ground.

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List of Abbreviations

ASM	Artisanal and Small Scale Mining
CAP	Cobalt Action Partnership
DRC	Democratic Republic of Congo
EGC	Enterprise Générale du Cobalt
FCA	Fair Cobalt Alliance
LSM	Large Scale Mining
OECD	Organisation for Economic Cooperation and Development
ZEA	Zone d'Exploitation Artisanale
3T	Tin, Tungsten, Tantalum
3TG	Tin, Tungsten, Tantalum and Gold

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1. Introduction

In March 2021 the launch of the first responsible artisanal cobalt sourcing standard in the Democratic Republic of Congo (DRC) received a lot of attention. The DRC state mining company Enterprise Générale du Cobalt (EGC, 2021a) claimed their Responsible Sourcing Standard to be a “game changing opportunity” for creating a responsible sourcing value chain of cobalt originating from the DRC. Their main aim is to formalize the large part of the cobalt mining activities that is taking place informally. These artisanal miners often work in dire working conditions in contrast to the large mining concessions that form the formal part of the cobalt mining sector. EGC’s ambitious plans answer to the increased global public pressure on companies to guarantee that the worldwide use of cobalt-based lithium-ion batteries does not provoke human rights violations locally. Responsible sourcing is presented as a win-win deal: attracting foreign companies, strengthening the DRC’s economic position, and enabling companies to secure their future cobalt supply necessary for the clean energy transition while simultaneously using mining as a driver for the local communities’ development. However, as this thesis will address, not everybody benefits equally from this *responsible sourcing* label. Whereas this label enables companies and the DRC government to meet sustainability standards and gain economically, the effects on the ground for the local mining communities lag behind.

The launch of the Responsible Sourcing Standard is exemplary for the large number of initiatives emerging in the changing landscape of the cobalt mining sector. Cobalt, a mineral which is highly concentrated in the southern provinces of the DRC, has become a hot topic of several strands of debates. On the one hand cobalt is seen as an essential element of the clean energy transition and global sustainability efforts, which has led to a huge increase of cobalt demand. On the other hand, numerous NGO and media reports have raised awareness about the social and environmental harm taking place in the mines in the DRC. Although the southern provinces are not characterized by the presence of armed groups, in contrast to the ‘conflict minerals’ 3T mines in the Eastern DRC, a broader understanding of conflict has broadened international focus beyond merely preventing conflict-financing to a focus on responsible sourcing (Hoex et al., 2021: 16). The cobalt necessary for green energy technologies used worldwide is often mined under hazardous working conditions in an environment characterized by child labour, mining pollution and large corruption issues. This demonstrates a global-local tension where global consumers and multinationals benefit at the expense of local communities. Besides, it demonstrates an environmental-human rights tension where an environmental solution is sought at the expense of human costs. As a result of the increased awareness of the human rights violations in the cobalt mines, the pressure on all actors involved to take adequate action and make the sourcing of cobalt from the DRC more responsible and sustainable has increased

(Mancini et al., 2020: 9, 41, 49; Fleury & Davies, 2012: 175). The combination of sustainability pressures and an increased demand has turned cobalt mining into a contentious governance issue.

1.1. Research question

This case of cobalt mining in the DRC can be understood in the larger context of an era characterized by globalization, an increased interdependency and interconnectedness of people and products, and neo-liberal reforms, a shift from state to the private sector. In this context a debate has emerged on the governance of global supply chains, in which the responsibility of companies for the social consequences of their foreign activities is increasingly emphasized and a shift can be identified from governance by state actors towards governance by state and non-state actors. The governance of the DRC's cobalt is a case of this larger trend of hybrid governance formations around global supply chains. We can identify new alliances and partnerships between state and non-state actors, local and global actors. I use the term 'responsible cobalt assemblage' when referring to those actors that are engaged in the governance of cobalt sourcing in the DRC and that have come together under the label of responsible mining. This assemblage is characterized by both social and material elements, including discourses, players, interests, regulation frameworks, institutions, and laws. Through this thesis I aim to demonstrate that the local-global and the environmental-human rights tensions do not disappear, despite the efforts of the actors to make this assemblage seem as coherent as possible. This leads me to the central question of this thesis:

How does the label of "responsible sourcing" enable a diversity of actors to govern the local realities of artisanal cobalt miners involved in the cobalt supply chain originating from the DRC?

This thesis question is further unpacked through the following six sub-questions, that build on the analytic of assemblage as set out by Li (2007):

1. How has a diverse set of actors forged alignments under the label of responsible cobalt sourcing?
2. How do simplified problems and solutions of the responsible cobalt assemblage make the assemblage seem more coherent?
3. How have the actors within the assemblage created a legitimizing discourse that confirms their assumptions and contains outsiders' critique?
4. How are the failures and contradictions of the responsible cobalt assemblage managed?
5. How have the actors within the assemblage reposed political questions in order to set the governance agenda?

6. How has the assemblage reassembled between 2016 and 2021?

This thesis is further divided into six chapters. Following this introduction in the first chapter, I will elaborate on the relevant literature on both my specific case as well as my analytical framework of assemblage in the second chapter. Thereafter I will continue with the analysis of this research. In chapter three I will explore the new multi-stakeholder alliances that have been formed and how these diverse sets of actors have simplified the complexity of the DRC's cobalt to a common problem and solution. Thereafter, in chapter four, I look at how the actors have authorized knowledge and managed failures and contradictions in order to make the assemblage seem more coherent. In chapter five, the last part of the analysis, I look at how the actors have set the boundaries of the governance debate and how certain elements have been included and others excluded, resulting in the responsible cobalt assemblage. Based on the analysis I will conclude in chapter six with an answer to the thesis question, a reflection of the research and recommendations for future research.

1.2. Research gaps and relevance

Although there is a vast amount of literature supporting assemblage thinking to governance, using assemblage thinking to analyse the more specific topic of global supply chains and the interface with corporate governance has not yet been explored. Taking the assemblage approach as my starting point, I aim to contribute to the understanding of the complex and dynamic power relations that play a role in the global governance of global supply chains, through the specific case of responsible cobalt initiatives and the subsequent transformation of the mining landscape in the DRC. This case demonstrates the necessity to take a closer look at the simplifying narratives of sustainability that are currently connected to products used globally, as they risk obscuring the continuation of power imbalances.

1.3. Methodology

Before delving into the core narrative of my thesis, I will first elaborate on the research strategy, including my ontological and epistemological stances, the research design and research methods through which I have conducted this qualitative research thesis. The epistemological nature of my research contains a perspective of understanding the social world as being constructed, rather than aiming to explain 'objective' observations (Jackson & Sorensen, 2016: 232). More specifically, I have used the approach of critical theory as described by Cox (idem: 233). Critical theory is fitting because my aim, which corresponds with the aim of assemblage approach, is to look 'beyond what we observe'. My aim is to critically look at the mainstream narratives and stories that consumers globally receive and try to understand how and why these narratives and stories are being constructed, and why other stories are not shared. Critical theory enables me to look at the interactions between actors, the power

relations that determine these interactions and the corresponding consequences of these interactions (Mason, 2018). Furthermore, a critical assemblage-based approach to complications in social life enables a view beyond 'fixed' complications and unveil opportunities of change (Briassoulis, 2018: 438).

The ontological nature of this research, reflecting what my research is fundamentally about, concerns the perspective of processes and interaction (Fumerton, 2020; Mason, 2018: 14). Analysing dynamics of interaction enables me to go beyond a mere explanation of the complexity of this assemblage and try to understand how and why this particular governance formation is assembled (Savage, 2020: 325-426; Demmers & Gould, 2018: 369; DeLanda, 2019: 4-5). The analytical framework of assemblage analytics reveals an intermediate level in which social entities are neither reduced to micro nor macro-levels of social reality (DeLanda, 2019: 4-5). Assemblage thinking thereby builds on a structuralist perspective, including both structure and agency and the interaction between these two: on the one hand how dominant structures enable human agency, and on the other hand how human agency reinforces or changes these structures (Baker & McGuirk, 2017: 431; Jabri, 1996).

Due to the qualitative nature of my research, I produced a research design that guided me throughout this thesis, while still being flexible and reflective of my decisions throughout the whole process (Mason, 2018: 24-25). From my initial research design I have made decisions in my research and strategy in accordance with the possibilities and limitations that proved itself along the way in order to, in Ragin and Amoroso's (2011) words, "create a dialogue between ideas and evidence". The phases leading to this thesis included (1) contextualisation and gaining an in-depth understanding of the main elements of the assemblage, (2) data gathering and (3) analysing and conceptualizing data.

The first two phases were carried out during my internship at International Peace Information Service (IPIS), from February till June 2021. I have gathered data through the qualitative research methods of conducting in-depth interviews and a document analysis of relevant reports, policy documents, media reports and academic literature. In the next chapter as well as at the beginning of the subsequent chapters I elaborate on the operationalization of my key concepts into indicators, which guided me in gathering my data. A document analysis has enabled me to identify the key elements of the responsible cobalt assemblage and the complex dynamics involved. Although I have not used the conducted interviews as primary data for this thesis, they have definitely contributed to my general understanding of the motives, positions and power relations of the actors involved. This has enabled me to look further than the dominant narrative consumers receive and analyse the less visible dynamics that play a role in this complication as well. I carried out the third phase through a content analysis, in which I used the analytical tool of 'template coding' to categorise and interpret my data, building on categories

derived from Li's practices of assemblage (Blair, 2015: 19). I operationalised the main assemblage practices into indicators, and manually identified each practice in the data through using different colours, after which I categorised these chunks of data per practice. As Blair (2015: 19) explains, this method enables me to address my positionality and acknowledge that I am giving 'the data a voice' through my own interpretation. Through coding the data I gathered, I have been able to use my material to build my main line of argumentation.

1.4. Limitations

There are several limitations of this research that need to be acknowledged in order to build on and improve in future research. First, the limited scope of time and the limited possibility to conduct research beyond my desk both influenced the amount and quality of data I was able to gather. This is on the one hand due to the COVID-19 pandemic, and on the other hand due to the international character of this topic. This limitation has been partly compensated through the large network of connections of IPIS, which enabled me to speak to both international experts in the field and DRC-based civil society members. Furthermore, it is important to acknowledge my position in this research, as I am European based and as a consumer dependent on products containing cobalt as well. Therefore, I too form a part of this global system of power imbalances and risk reinforcing popular dichotomies through bias, assumptions, and simplified narratives. Besides, due to my position I have not been able to include a large amount of data representing the local perspective. Through acknowledging these limitations and carrying out reflexive practices throughout my research I have nevertheless aimed to preserve the research quality (Secules et al., 2021: 21). Future research would benefit from including the local perspective more and thereby contribute to a much needed holistic picture of this and other similar cases.

2. Assemblage theory and global supply chain governance

In order to position my research in existing debates and to demonstrate how I contribute to filling gaps in these debates, I will give a review of the relevant literature for both my case and my analytical framework. I start with the literature on the business-human rights nexus that emerged in the context of neoliberalism and globalization, with a focus on corporate social responsibility. Thereafter I will elaborate on the theory of assemblage, and more specifically on the practices of assemblage as set out by Li (2007) and why I have chosen this as the lens through which I study the case of cobalt mining in the DRC.

2.1. Production systems in the context of neoliberalism and globalization

Since the 1980s, under the shift to neoliberalism, national production systems have become increasingly globalized. In the neoliberal paradigm a shift has taken place from the state to the private sector, in which the assumption prevails that economic growth and development will follow from a free market and free trade (Osei-Hwedie et al., 2019: 188). This shift coincides with the intensification of globalization, characterized by increased interdependency and interconnectivity of products and people across the world (ibid.). In this context of globalization and neoliberalism, globalized production systems have led to a gap between states' governance capabilities and the kind of governance necessary for the challenges that have emerged (Bair & Palpacuer, 2015: 1-2). Simultaneously, global neoliberalism has blurred the lines between state and non-state actors, and between public and private matters (Wettstein, 2012: 742-743). On the one hand, states have become less capable of solving the transnational challenges that have emerged (Bair & Palpacuer, 2015: 7). On the other hand, non-state corporate actors have become increasingly powerful players in this new global economy. This has led to a debate about the governance gap regarding global production systems, and a movement calling on the level of the corporation to fill this gap.

To understand the global order in which the mining landscape in the DRC is transforming we also need to take a look at the shift in security focus that took place in the late 20th century (Gould, 2016: 22). The focus of global security shifted from state security and state sovereignty to human security and human rights (ibid.). This is also referred to as the shift from geopolitics to biopolitics, where geopolitics concerns the security of states and biopolitics the security of populations (Duffield & Waddell, 2004: 2). Together with the expanded role of corporate actors, this security shift has resulted in an increased attention for the effects of business practices on human rights (Wettstein, 2012: 742). In the case of cobalt, this partly explains the increased international attention for the human rights violations in the DRC's cobalt mines, as the mainstream narrative now puts populations at the centre of security dialogues. However, critiques have been raised about the extent to which this discourse of human

security is translated into concrete policy (Grayson, 2010: 498). Grayson (2010: 507), for example, argues that the influence of neoliberalism in shaping the contours, possibilities and limitations of security policy is often forgotten. To understand the limitations of human security policy Grayson (2010) argues that we need to pay attention to the inherent limitations of the economic framework in which the human security discourse emerged. This critique coincides with the critiques on corporate social responsibility, which I will demonstrate in the next section.

2.2. Corporate social responsibility

The notion of corporate social responsibility (CSR) focusses on the impact of the behaviour of corporations on society (Scherer, 2018: 388). Whereas businesses were originally viewed as purely economic actors, Scherer et al. (2014: 147-149) transform the existing CSR concept from an economic to a political concept by arguing that businesses are now political actors as well. This is a result of the governance gap, as explained above, leading to new forms of global governance (Bair & Palpacuer, 2015: 7). Viewing corporate actors as political actors, along with states, civil society groups and international institutions, has led to the understanding of corporate actors as active participants in global governance systems (Scherer & Palazzo, 2011: 900). Bair and Palpacuer (2015) provide a slightly different understanding of CSR, which they explore in the specific context of globalized production systems, through introducing the notion of contested governance. From this perspective CSR is not understood as an outcome in itself, but rather as an “ongoing process of contestation about the role of business and society” (idem: 8). This thesis builds on the understanding of CSR as a process, as this fits with both the ontological nature and the assemblage analytic of this research.

New norms, instruments and policies have emerged as a reaction to corporate actors taking on this new role and filling the global governance gap. Partzsch and Vlaskamp (2016: 978) demonstrate and explain the diffusion of the emerged global foreign accountability norm, which concerns the norm that transnational companies are being held accountable for their behaviour and the societal risks that result from their actions. This norm has further developed from a ‘do no harm’ principle to a new ‘business for peace’ normative ideal (Schouten & Miklian, 2020: 420-423). In the face of this norm several instruments have been created that aim to guide companies in taking their part in sustainable societies, including the UN Guiding Principles on Business and Human Rights (UNGPs), the Sustainable Development Goals (SDGs) and the OECD Due Diligence Guidance (Buhmann et al., 2019: 390). Furthermore, the diffusion of this norm has resulted in state actors adopting supply chain due diligence policies. These due diligence requirements aim to fill the global governance gap of foreign activities by transnational companies in the international free trade paradigm (Partzsch & Vlaskamp, 2016: 979). Besides mandatory initiatives, voluntary initiatives are also increasingly being introduced in the

diffusion of this norm (Baumann-Pauly & Trabelsi, 2021). However, various authors question the legitimacy and accountability of CSR-activities, arguing that these activities follow a neo-colonial rationale and reinforce structural power imbalances (Hofmann et al., 2018: 29). For example, Radley and Vogel (2015: 409) highlight the risk of responsible movements becoming 'greenwashing', which they define as a company improving its public image rather than solving problems on the ground. Through using CSR narratives and responsible labels companies are in reality often able to continue their 'business as usual' (Hamann & Kapelus, 2004: 86).

The notion of CSR has developed in the mining industry as well. The possible connection between mining and positive development was first introduced at the UN Conference on Environment and Development in 1992 (Frederiksen, 2018: 495-496). Meanwhile, in the field of the minerals 3TG the foreign accountability norm has been translated from the voluntary, non-binding OECD Guidance's due diligence recommendations to voluntary and mandatory due diligence requirements in for example the regional regulations of the US Dodd Frank Act Section 1502 and the recently implemented European Union Conflict Minerals Regulation (Hoex et al., 2021: 24-25). However, simultaneously with the increase of mining companies' CSR activities, similar critiques have been raised that demonstrate a gap between the CSR programmes and the impacts for the mining communities (ibid.). This has especially been a topic of debate in the scrutinized topic of the 'conflict minerals' 3TG extracted from the DRC. Vogel and Raeymaekers (2016), Radley and Geenen (2021), and Hofmann et al. (2018) are amongst the authors that have written extensively about the role of power relations in the case of the 'conflict minerals' campaign. These authors have voiced critique on due diligence and other transparency mechanisms as a means to ensure social sustainability. For example, Ben Radley emphasizes the importance of acknowledging the limits of traceability and technical, top-down mechanisms that are aimed at improving social risks in supply chains. He argues that, especially with the 3TG, technical, top-down solutions are in itself not enough to solve political conflicts (Klovig Skelton, 2020; Sovacool et al., 2020). Compared to the amount of literature on the conflict minerals, the literature on the cobalt supply chain has only started to evolve recently. The articles by Deberdt and Le Billon (2021), Sovacool et al. (2020), and Calvão et al. (2021) form the basis of the emerging literature on responsible cobalt sourcing efforts. However, none of the authors on either 3TG or cobalt have used an assemblage approach to analyse this topic of the governance of global supply chains. Through using an assemblage approach, I aim to contribute to the limited scope of research on the specific case of responsible cobalt initiatives in the DRC, as well as to broader patterns of global supply chain governance (Lund, 2014: 225).

2.3. Analytical framework: assemblage

The analytical framework I have chosen as the 'lens' through which I will operationalise my puzzle consists of an assemblage approach. The increased popularity of the assemblage approach has resulted in several adapted versions of the theory as well as a certain amount of critique on these variations (Savage, 2020: 319). One part of the academic debate on assemblage thinking concerns the interpretation of the original source of assemblage theory. This is connected to the second part of the academic debate, the extent to which authors either use assemblage as an ontology or as a methodological tool. In the literature on assemblage theory, the philosophers Deleuze and Guattari are often referred to as the initiators of the now commonly used concept of assemblage (Nail, 2017: 21). However, several authors argue that Deleuze and Guattari merely introduced an abstract concept of assemblage and never formalized this as a theory. Therefore, authors such as DeLanda (2019: 3) have built on this concept and developed their own theory of assemblage (Nail, 2017: 21). Nail (2017), on the other hand, represents the side of this debate that calls for a return to the original understanding of the theory of assemblage as introduced by Deleuze and Guattari. Before I elaborate on the specific study of assemblage to governance, Nail's (2017: 21) formalization helps us to understand and clarify the general structure of the assemblage theory.

Following the definition of Deleuze and Guattari, an assemblage is understood as a complex, fluid and constructed multiplicity of heterogeneous elements that have been assembled towards particular desired outcomes (Nail, 2017: 22-24; Savage, 2020: 325). In contrast to a unity of various parts, an assemblage is characterized by its multiplicity, contingency, lack of essence and ever evolving nature (Nail, 2017: 22-24). Nail (2017) breaks this definition into parts through illustrating the basic structure of all assemblages, consisting of three features: their abstract conditions, their concrete elements, and their agents. The abstract conditions of an assemblage concern the set of external relations through which elements are connected and appear to be meaningfully related (*idem*: 24-25). The second feature refers to the concrete embodiment of the assemblage (*idem*: 26). The external relations and these elements themselves are mutually transformative: one cannot change without the other changing as well (*ibid.*). The third feature of assemblages refers to the agents, the situated subjects that connect the elements with each other through their external relations (*idem*: 27). The interdependence of these three features illustrates the multiplicity and ever evolving nature of assemblages (*ibid.*). This understanding and these core concepts of assemblages, as introduced by Deleuze and Guattari and formalised by Nail, form the basis of a vast amount of literature on assemblage approaches.

However, as Buchanan (2015) argues, a large part of the literature on assemblage thinking has drifted away from these original features of assemblages. This has resulted in a large number of studies using assemblages methodologically rather than as a theory (Buchanan, 2017: 460). This ‘misunderstanding’ is the core of the academic debate on assemblage thinking that has evolved ever since (ibid.). Buchanan (2015: 388, 391; 2017: 457-458) argues that this development has led to a tendency to incorporate everything, which eventually leads to a loss of clarity of the concept of assemblage and its analytical power. However, there are also authors, such as Bueger (2017), Baker and McGuirk (2017) and Savage (2020), who have tried to bridge this academic divide and demonstrate that assemblage can be used both as ontology and as methodology. On the one hand, Savage (2020: 320-321) supports the critique that the popularity of assemblage theory has led to a lack of methodological precision and coherent conceptualisation of the theory. On the other hand, Savage argues that this is not necessarily due to a lack of attention for the origins of the theory, but rather due to a lack of a coherent framework of the theory. Bueger (2017) support Savage’s attempt to bridge the divide in the literature, arguing that new versions of assemblage are a result of increased focus on practices in international relations studies in general. Furthermore, Baker and McGuirk (2017) demonstrate that it is possible to bridge the academic divide through operationalizing the methodological-analytical application of assemblage thinking while simultaneously being committed to the core assumptions of the theory of assemblage thinking: multiplicity, processuality, labour and uncertainty. These core assumptions are in line with Nail’s formalization of Deleuze and Guittari’s theory of assemblage, illustrating that it is possible to make their abstract theory more concrete while not letting go of the core of assemblage theory.

2.4. Assemblage theory, governance, and practices of assemblage

As the popularity of assemblage has grown it has been applied to a diverse range of fields of study, including the more specific study of assemblage to policy and governance (Baker and McGuirk 2017: 428). Governance can be defined as the process of guidance for collective action concerning a specific situation (Briassoulis, 2019: 421-422). Briassoulis (2019) gives an overview and a discussion of this large number of studies using assemblage theory to study governance. These studies demonstrate the similarities between assemblage and governance: both are characterized by multiplicity, fluidity, and complex dynamics (idem: 446). These parallels make assemblage theory a useful approach to analyse governance (ibid.). Assemblage theory enables researchers to study complex governance configurations and the role that power, authority and legitimacy play. Bueger (2017: 615) goes on to demonstrate the advantages of assemblage theory to the study of global governance and public-private interactions. More specifically, as Amelina (2020: 361) demonstrates, assemblage theory helps us to grasp “complex patterns of cross-border inequalities”. To further operationalize the assemblage approach to governance I will turn to Li’s (2007) practices of assemblage.

As Baker and McGuirk (2017: 431) state, the effects of an assemblage are established through the processes underlying the assemblage. These processes are further defined by Li (2007) as the practices of assemblages through which heterogeneous elements are being brought together, thereby constructing capabilities and new conditions of possibilities (Baker & McGuirk, 2017: 431; Demmers and Gould 2018: 369). Li (2007: 263) has deployed a new analytic of assemblage to governance. She identifies six practices of assemblage: forging alignments, rendering technical, authorizing knowledge, managing failures, anti-politics, and reassembling. Forging alignments can be defined as the processes through which the objectives of diffuse networks and actors involved in the assemblage are linked together, thereby creating new partnerships and alliances between a diverse set of parties (Li, 2007: 265; Wilhusen, 2019: 8). Rendering technical refers to the processes through which social technologies are created that translate governance rationales into certain types of action in order to make the assemblage seem more coherent (Li, 2007: 265; Wilhusen, 2019: 8-9). This is often done through creating a simplified narrative through a common understanding of (a) the problem, (b) the solution and (c) the beneficial results. Through the third practice, authorizing knowledge, actors set out the necessary bodies of knowledge through a discourse of the confirmation of assumptions and the containment of critiques (Li, 2007: 265). Here the actors distinguish between valuable and less valuable knowledges (Müller, 2020: 423). The practice of managing failures and contradictions concerns the processes through which failures and contradictions are managed through framing successes and downgrading failures. Through the practice of anti-politics actors repose political questions in order to set boundaries of the governance agenda, thereby encouraging certain debates and shutting other debates down. The last practice of assemblage, reassembling, can be defined as the continuous process by which new elements are included and normalized and how this may lead to new frictions.

2.5. Positioning my research

An assemblage approach is most fitting for my research puzzle for several reasons. Seeing the responsible cobalt movement as an assemblage enables me to look at how both material and social elements have come together with the aim to have a governance effect: making the cobalt supply chain more responsible. These elements include the social elements of players, discourses and interests and the material elements of objects, institutions, laws, and regulatory frameworks (Li 2007: 266). As Demmers and Gould (2018: 365) demonstrate, the complexity and fluidity of these global governance formations obscure lines of responsibility and accountability. Understanding the responsible cobalt mining formation as an assemblage enables me to unpack how power operates through practices of assemblages, and thereby to raise critical questions about how and why these elements have been assembled (Baker & McGuirk, 2017: 432). This thesis builds on the assumption of

assemblage theory that elements do not come together accidentally, but they are strategically made to cohere and act (Savage, 2020: 325; Li, 2007: 264).

3. Multi-stakeholder alliances simplifying the complexity of DRC's cobalt

3.1. Responsible cobalt sourcing initiatives

Although cobalt mining has been taking place in the DRC since 1924, the demand and the mining production of the mineral increased rapidly at the end of 2015 (BGR, 2019: 2-3). Since this increase in demand, the governance formation of the cobalt mining sector in the DRC has been reshaped, which is exemplified by the recent emergence of a range of multi-stakeholder initiatives. The governance formation now includes a multiplicity of bodies including DRC state actors, international state actors, non-governmental organizations, civil society actors and corporate actors. The increased presence of international actors along with foreign investments can be explained due to the increased global relevance of cobalt. The active participation of non-state actors especially increased after Amnesty International published a report in 2016 unveiling the hazardous working conditions and issues of child labour characterizing the cobalt sector in the DRC (Carter & Sturmes, 2020: 17). This report, and a range of media and NGO reports that followed, contributed to the increased public pressure on both state and non-state actors to guarantee responsible supply chains (Chen, 2021: 150-151; Calvão et al., 2020: 3). Chen (2021) demonstrates this through an in-depth case study of the transnational cobalt refiner Huayou Cobalt, who responded to the alleged human rights violations through creating new alliances with other public and private actors. Besides forming alliances, which I will elaborate on below, these actors have brought together a range of material elements. The elements which I have identified as being most relevant include the DRC Mining Code, introduced in 2002 and revised in 2018, and the OECD Due Diligence Guidance, first introduced in 2011, together with its corresponding and follow-up reports. These material elements have been brought together by the actors of the assemblage with the aim to have a governance effect under the new label of making the cobalt supply chain more responsible.

This responsible cobalt assemblage is exemplified by a range of multi-stakeholder responsible sourcing partnerships that have recently emerged, including both public and private actors. These partnerships include the Fair Cobalt Alliance, the Global Battery Alliance's Cobalt Action Partnership, and the Mutoshi Cobalt Pilot Project, which later became the foundation of the Enterprise Générale de Cobalt. I will first introduce these initiatives separately, after which I will demonstrate the overall similarities in how they have carried out the assemblage practice of rendering technical through creating a common (a) problem, (b) solution and (c) beneficial results.

The Fair Cobalt Alliance (FCA) is an action platform which was launched in 2020 by the Impact Facility, Fairphone, lighting company Signify and the above-mentioned transnational cobalt refiner Huayou Cobalt. The Impact Facility (n.d.-a) proclaims to be "sustainability experts with a new approach to

transforming mining communities”. As an industry actor, Fairphone (n.d.-a) is “changing the electronics industry from the inside” through working together with suppliers and local communities. Any actor along the global cobalt supply chain is invited to join this initiative, which now includes fourteen members ranging from governments to industry players and civil society organizations. The aim of the alliance is to bring these actors together and work towards a fair electronics industry through responsible sourcing. The three main objectives of the alliance are: professionalizing artisanal mining, ending child labour, and increasing alternative household incomes (Carter & Sturmes, 2020; Lempers, 2020).

The Cobalt Action Partnership (CAP) is a multisectoral public-private coalition, established by the Global Battery Alliance. The aim of this coalition is to, through collaborative action, support responsible cobalt supply chains. The activities carried out considering this goal include stakeholder dialogues, addressing and eradicating child labour and forced labour and creating a common framework for ASM cobalt. The key implementing organizations include the Responsible Minerals Initiative, Corporate Social Responsibility Europe, Fair Cobalt Alliance, IMPACT, International Institute for Environment and Development, NYU Stern and UNICEF. The CAP is further supported by over 70 members of the GBA (Global Battery Alliance, 2020). The collaboration between CAP and FCA demonstrates how all actors and initiatives aimed at responsible cobalt sourcing are interconnected. These initiatives all share the assumption that multi-stakeholder collaboration is necessary to reach their objectives (OECD, 2021b).

The last responsible sourcing partnership included in this overview is the Mutoshi Cobalt Pilot Project, which also functions as the project model for the recently launched Enterprise Générale du Cobalt (EGC) (EGC, 2021a). This project started in 2018 at the Mutoshi copper and cobalt mining concession near Kolwezi, in the province of Lualaba. The Mutoshi project was initially a commercial sourcing agreement between the mining and processing company Chemaf, subsidiary of Dubai-based Shalina Recourses, and the cooperation COMIAKOL (Johansson de Silva et al., 2019: 6). The international commodity trading company Trafigura, the international NGO Pact and sustainability consultancy KUMI also entered the collaboration, and together these actors have framed the project as a responsible sourcing partnership aimed to “ensure the safe and secure delivery of cobalt to the market” (idem: 10). This pilot project has been brought to scale through the launch of EGC in March 2021 (EGC, 2021a). EGC is a state mining company that has been appointed the monopoly for artisanal cobalt, thereby now being the sole legal buyer, with the aim to support the DRC government in formalizing ASM (ibid.). EGC published its responsible sourcing standard, whose implementation depends on a cooperation similar to the Mutoshi project: including Trafigura, Pact, KUMI, mining cooperatives and state governance services.

The FCA, CAP, Mutoshi project and EGC all demonstrate how the objectives of a diversity of actors have been aligned under the common label of making the cobalt supply chain more responsible. The responsible cobalt assemblage enables a multiplicity of bodies, including governmental, developmental, and industrial actors, to come together. Although most actors are not necessarily new to the cobalt sector, the change is due to the new alliances that have been formed between these diverse actors. Whereas before they were working towards their objectives separately, corporate actors such as Huayou Cobalt are now actively seeking cooperation with other state and non-state actors. This change has mainly been taking place since 2015, in a reaction to increased demand for cobalt as well as increased sustainability pressures. Following Nail's (2017) structure of assemblage theory: the responsible cobalt initiatives form the abstract conditions through which various elements appear to be meaningfully related, in turn enabling new conditions of possibilities.

3.2. ASM formalization as the key to development

The above responsible sourcing partnerships share similarities in their problem definition and proposed solution to this problem. In doing so they have simplified the narrative, concealed tensions, and made the assemblage seem coherent (Li, 2007: 265; Wilhusen, 2019: 8-9).

In the DRC, 70% of cobalt is extracted through large-scale mining (LSM) and 30% is extracted through artisanal small-scale mining (ASM). Whereas cobalt through LSM is extracted through industrial machinery, in ASM cobalt is extracted manually by diggers working either independently or in small groups (Hoex et al., 2021). In contrast to LSM, the ASM sector is responsible for thousands of livelihoods and therefore forms an important economic sector for local communities (ibid.). The ASM sector in the DRC is regulated by the Mining Code, which states that ASM is considered legal if it takes place at a designated mining zone (ZEAs). However, as these zones are very limited, ASM operating on an existing LSM license with permission of the license holder is also considered legal (BGR, 2019: 12). Nevertheless, the biggest part of artisanal cobalt mining is taking place outside of these legal structures (BGR, 2021: 14). Informal ASM, irrelevant of which mineral, is largely associated with problems of illegality, poverty, and human rights abuses (Geenen, 2012). As Baumann-Pauly (2020) states in a paper for the World Economic Forum: "The prevalence of artisanal and small-scale mining (ASM) in the cobalt supply chain creates challenges for establishing responsible sourcing practices". The complexity of the DRC's cobalt sector is thereby often simplified to the shared problem of informal ASM and diggers illegally entering mining concessions to mine cobalt.

International attention for the ASM cobalt sector has increased significantly since 2016, when Amnesty International published their report unveiling the human rights violations taking place in the ASM cobalt sector in the DRC (Carter & Sturmes, 2020: 17). Numerous reports have followed, adding to the

common understanding that the informality of ASM is the cause of the human rights violations in the mines. Despite research demonstrating that mining is not the main driver of child labour, and that the absence of children in the mines does not solve the underlying problems causing children to work instead of going to school, child labour is still continuously being linked to ASM cobalt – further confirming the problematic nature of the informal cobalt diggers (Faber et al., 2017; OECD, 2021a: 14; De Brier, 2020).

The responsible cobalt initiatives mentioned above all emphasize a technocratic solution to this problem: ASM formalization. The formalization of ASM is promoted as the solution to address and mitigate human rights issues. A formalized ASM cobalt sector will enable the implementation of traceability mechanisms, which will in turn increase the transparency and accountability throughout the cobalt supply chain (Sovacool, 2020: 31). In contrast to the informal artisanal mining taking place now, this new reality will enable actors to control what is happening in these mines. This is believed to result in a decrease of human rights violations and an increase in positive developments in the form of social and economic benefits for the local mining communities (Baumann-Pauly, 2020: 4). The actors setting the boundaries for these formalization projects simultaneously set the boundaries for who is included and who is excluded from these projects, and thereby who is included and excluded from the assemblage. As will be demonstrated in chapter five of this thesis, diggers often have to comply to certain rules in order to enter the formalized mining sites (Katz-Lavigne, 2020: 399). However, not all diggers are willing or able to do so. This creates a gap between those that are willing and able to comply and those that are not, who are thereby excluded from the assemblage.

In order to formalize ASM, several social technologies in the form of control, traceability and due diligence mechanisms have been introduced. Social technologies can be defined as the manifestation of certain assumptions into action, in the form of programs, models and tools (Wilhusen, 2019: 4, 7). In this case the assumption of formalized ASM being a driver for development is translated into due diligence mechanisms. Due diligence has been framed as a management tool for the social problems in mineral supply chains, and thereby as a means to increase transparency, which in turn motivates actors to take their responsibility for any harm being done through their actions (Hofmann 2018: 5, 10). To give an example, the Impact Facility has created a model for responsible ASM mine sites which includes fourteen elements that are necessary for responsible ASM production practices (Carter & Sturmes, 2020: 45-47). Controlled mine access through the use of ID cards and building a wall as a border control, to keep children and unauthorized diggers out of the mines, are two of the elements included (ibid.). The Mutoshi project and the EGC responsible sourcing standard include the traceability mechanism of ‘bagging and tagging’, through which material sourced on the included

mining sites are tagged and can thereby be traced through the rest of the supply chain (Johansson de Silva et al., 2019: 34; EGC, 2021b: 12).

The OECD Due Diligence Guidance also contributes to the practice of rendering technical. This practical guide for responsible supply chains can be understood as a social technology that translates the governance rationale of responsible mineral sourcing into certain types of actions in accordance with sustainable corporate engagement (Li, 2007: 265; Wilhusen, 2019: 8-9; OECD, 2016: 3). These types of actions are made practical through the five-step framework, setting out the five steps through which companies should integrate their risk-based due diligence system (OECD, 2016: 17). The Guidance and its five-step framework have become the main material element that actors refer to when carrying out responsible sourcing efforts. The Impact Facility, the Cobalt Action Partnership, the Mutoshi project and EGC all claim to be aligned with the Guidance (Johansson De Silva et al., 2019: 5; EGC 2021b: 3; The Impact Facility n.d.-b; Global Battery Alliance 2020: 5).

In this chapter I have demonstrated how new alliances and partnerships have been formed around the common label of responsible cobalt sourcing. Under this common label, the actors of the assemblage have aligned their diffuse interests and created a common understanding of the problem and solution. In doing so, the actors have actively aligned their economic interests with social sustainability pressures, enabling their involvement in the governance of cobalt mining in the DRC and thereby their power to set the boundaries for the assemblage and ensure their future supply of cobalt.

4. The contrast between the narratives of success and the reality on the ground

Through the third and fourth practices, authorizing knowledge and managing failures and contradictions, the actors have further defined the boundaries of the responsible cobalt assemblage. In this chapter I start with exploring the processes through which the bodies of knowledge have been set out, which I have identified through looking at the actors responsible for the dominant discourses that follow from standards set up for the initiatives. Thereafter I will touch upon the processes through which failures and contradictions are being managed, through looking at how and when actors have framed successes while simultaneously downgrading failures.

4.1. The voices determining the dominant discourse

By distinguishing between valuable and less valuable bodies of knowledge, the actors of the assemblage are able to construct and align the dominant discourse with their objectives (Müller, 2020: 423; Wilhusen, 2019: 7). Through the discourse they use they are able to confirm assumptions and contain critiques, thereby determining outsiders' understanding of the problem and what needs to be done to solve this problem (Li, 2007: 265; Wilhusen, 2019: 7). In the responsible cobalt assemblage the dominant discourse is framed in line with corporate social responsibility, thereby seeking solutions through the use of business terms (Wilhusen, 2019: 7). In this context, locally led processes in the ASM sector are overlooked as a result of foreign corporations, together with the Congolese state, taking the lead (Radley & Geenen, 2021).

The Mutoshi Cobalt Pilot Project and the EGC both draw on the knowledge of industry actors, whereas the voices of local communities are excluded. The actors leading the Mutoshi project have framed the project as a success story of ASM formalization leading to social and economic benefits for mining communities. However, as the project was initially a commercial sourcing agreement it did not include specified socio-economic objectives, making it impossible for the actors to fully evaluate the local economic impact of the project (Johansson de Silva et al., 2019: 6). Furthermore, the implementing actors have downplayed several limitations of the project in order to be able to frame the project as a success, which will be further elaborated on in the second part of this chapter. Despite these acknowledgments, the experience that came out of this project has been deemed 'valuable' by the implementing actors and through its framing as a success story it now functions as a model project for EGC's responsible sourcing standard (Trafigura, 2020).

The EGC Responsible Sourcing Standard has been framed by the EGC themselves as the first responsible ASM cobalt sourcing standard in the DRC. The standard has been set up by the EGC Technical Committee, including representatives of EGC and Pact (EGC, 2021b). The project builds on Pact's experience with transparency and traceability programs in other mining sectors in the DRC,

including the implementation of the ten-year-old iTSCi (Tin Supply Chain Initiative) traceability scheme in the 3T minerals sector (Hoex et al., 2021). Building on the knowledge derived from Pact's experience legitimizes the involvement of the same actors in implementing similar programs in the cobalt mining sector. However, existing traceability schemes such as iTSCi have received critiques about effectiveness and unintended consequences as well. These critiques mostly flag a lack of transparency and a monopsonic situation leading to miners' distrust of the program and a lack of incentive to join formal mining (idem: 33-34). Whereas this experience has provided lessons that can be taken to improve responsible cobalt initiatives, at the moment EGC seems to risk repeating similar caveats that can limit the program's effectiveness (ibid.). This risk can be identified due to the fact that the program builds on industry and expert knowledge, whereas the knowledge from local voices has not been included in this first phase of drafting this responsible sourcing standard. Trafigura (n.d.) mentions that the standard reflects the perspective of all stakeholders, including local stakeholders through the representatives of the mining cooperatives. However, cooperatives often do not represent the miners' interests, which are therefore not included (Mancini et al., 2021: 9). As Sovacool (2021: 281) states: "mining cooperatives, intended to support local miners, have in one other sector (South Kivu) done the opposite and become tools furthering the exploitation of miners at the hands of the elite". The basis of the EGC Responsible Sourcing Standard shows that the bodies of knowledge from an industry actor and an international NGO are prioritized over local bodies of knowledge, legitimized through framing previous experiences as success stories.

These examples of authorizing knowledge are in line with Radley and Geenen's (2021) case study on the transfer of value in the DRC's gold sector. They demonstrate how artisanal mining is being deliberately devalued, both materially and discursively, while the value transfer to foreign firms is prioritized (idem: 4). Through a business-development discourse the Congolese state and foreign corporations are able to control the growth of artisanal mining, by making artisanal mining a part of industrial mining rather than cultivating local actors and locally led processes (idem: 10). On the one hand this takes place through material elements: the DRC Mining Code favours industrial mining over artisanal mining as it states that artisanal mining is only legal on designated zones, which barely exist and the few that do exist are located in non-resourceful areas (idem: 11). Artisanal miners digging in industrial mining zones are 'tolerated' if the concession owner signs an agreement with a mining cooperative, locating the power with the mining companies rather than the artisanal miners. On the other hand, artisanal mining is devalued discursively, through emphasizing the illegality of artisanal miners (ibid.).

In this section I have demonstrated how framing pilot projects such as the Mutoshi project as a success creates a legitimizing discourse around the necessity of ASM formalization and the successful benefits

that follow. The EGC is able to continue through this discourse and build on the experiences of the actors implementing the Mutoshi project and projects in other mineral sectors, further confirming the assumption of corporate social responsibility that business solutions function as the key to create local benefits (Wilhusen, 2019: 7). Through authorizing knowledge mining companies and the DRC state have created a discourse in line with industry objectives, thereby setting the boundaries for what is deemed necessary in the ASM cobalt sector in the DRC. These initiatives are based on global industry-based knowledge together with global sustainability knowledge from international NGOs, reflecting the interests of industry and international actors rather than the interests of local communities.

4.2. Limitations and unintended consequences of top-down initiatives

Besides looking at how elements have come together, an assemblage approach enables me to look at the effects that follow from how the assemblage is able to act (Demmers & Gould, 2020: 373). Contrary to the picture the responsible cobalt assemblage draws, a gap can be identified between the local realities and the responsible sourcing initiatives. Pilot projects, such as the Mutoshi project, are framed as successes although in reality the promised developmental effects on the ground are limited. Regardless of this contradiction, companies are able to secure their cobalt supply and their 'responsible' reputation (Deberdt & Le Billon, 2021: 7-8). The limited effects on the ground are often a result of the inherent limitations of western-based, top-down initiatives (ibid.). Besides, there are often unintended negative consequences that follow from responsible sourcing initiatives (Calvão et al., 2021). Through this section I will explore how these failures and contradictions have been ignored or downplayed, and thereby managed, by the actors of the responsible cobalt assemblage.

There are several failures and contradictions of the Mutoshi project that exemplify recurring limitations of top-down foreign led formalization efforts. As Calvão et al. (2021: 7) argue, "efforts to formalize ASM inadvertently restrict the flexibility and freedom of these miners". Formal mining takes place in fixed areas and includes fixed cobalt prices, both reducing the negotiation power of miners compared to their negotiation power in informal mining. Besides, both elements contribute to governmental and industrial actors being able to control where, when, and how artisanal mining takes place. The Mining Code states that ASM is only legal in designated zones, which are appointed by the government (Zeuner, 2018: 4). In these designated areas the cobalt prices are fixed, set by the cooperative and the mining company and argued to ensure financial security in the face of price volatility. However, the Mutoshi project demonstrates the downside of the flexibility artisanal miners have to hand in when joining formal initiatives. At a certain point, the cobalt price was lower in Mutoshi than in surrounding informal markets, leading to miners seeking options outside of the Mutoshi project (idem: 4; Johansson de Silva, 2019: 15). Besides a decline in the miners' income, Chemaf withdrew

several services in 2019 that provided security and safety for the miners. The withdrawal of services and the final closing of the project in 2020 demonstrate the vulnerability of the project, which negatively influences the promised long-term impact (Deberdt & Le Billon, 2021: 8).

This demonstrates that when faced with challenges, in this case a drop in the world market price of cobalt, the artisanal miners are often the ones impacted the most, both in terms of human and financial security (Deberdt & Le Billon, 2021). This is a part of a trend Calvão et al. (2021) identify in corporate-led formalization efforts where, through incorporating ASM on LSM concessions, reputational and price fluctuation risks are being outsourced from the corporations to the miners. First, the reputational risk is managed as accidents are not likely to take place in these controlled areas, confirming the companies' responsible reputation. Second, price fluctuation risks are managed through fixed prices. However, in the case of the Mutoshi project, the miners paid the price of market fluctuations despite promised financial security. Although responsible sourcing partnerships to a certain extent do succeed in improving miners' health and work safety, the promised financial security often remains absent (Calvão et al., 2021: 5). This limitation is managed by the Mutoshi project through emphasizing the benefits for the local communities in a narrow definition of human security, focussing on the improvement of miners' health and work safety and not on financial security (ibid.).

Besides financial insecurity, the DRC's mining sector is characterized by several other existing challenges that go beyond due diligence and are often not addressed or included in responsible sourcing initiatives. For example, Deberdt and Le Billon (2021: 10) demonstrate how the focus on limited terms of human security limits the responsible sourcing initiatives' attention for the interconnectedness and competition between artisanal and industrial mining in the cobalt sector. Furthermore, as Mancini et al. (2021: 7) flag, although the Mutoshi project claims to have avoided child labour, there is no information on the presence of children in the surroundings of the mining site. Chen (2021: 168) highlights the same caveat in Huayou Cobalt's activities towards a responsible cobalt supply chain. Although the refining company, which forms a part of the FCA, has put due diligence mechanisms in place for the risk of child labour, there is lack of public information on the company's management strategies of other risks (ibid.). Emphasizing measures taken for one specific risk obscures the lack of measures taken for other risks, providing a skewed image of the reality. Furthermore, a successful formalization effort in one mining site does not reflect an improvement in the artisanal cobalt mining sector as a whole. The emphasis on a singular success story also contributes to a skewed image of the reality. However, bringing these pilot projects to scale is complex as not all mining sites are as accessible as the ones chosen for pilot projects. As Diemel and Cuvelier (2015: 152) flag, projects risk being implemented where there is the highest chance of success rather than where these projects are most needed. These challenges all demonstrate the limitations of ambitious formalization projects

such as EGC, despite them being pictured as success stories which enables and legitimizes the continuation of these projects.

As Calvão et al. (2021: 7) argue, formalization can function instrumentally as it enables industry and state actors to 'control' how and where ASM miners operate, thereby managing reputational and price fluctuation risks. In the meantime, the contradictions of these initiatives support a common critique of ASM formalization, which has mainly been raised in the case of 3T ASM formalization but now risks being repeated in cobalt ASM formalization. This critique concerns the question of who pays the price for these formalization and traceability programs. As has been demonstrated in the case of 3T, the ASM miners often pay the price while industry and state actors meet their economic and reputational objectives. Furthermore, the complexity of the mining sector and the lack of state capacity lead to challenges beyond due diligence, which will not be fixed merely through solutions that are made to seem more successful than reality shows us.

5. What stories are told and what stories are not

The practices of anti-politics and reassembling are the last two practices I will explore. I will start with the processes through which actors have reposed political questions in order to shut down certain debates and encourage others, thereby defining the boundaries of the governance agenda. Thereafter I will continue with the practice of reassembling; how new elements have been included and others have been excluded in this assemblage of responsible cobalt, and how this in turn has led to new frictions.

5.1. Child labour dominating the governance agenda

There are certain narratives that have become dominant in the global discourse around cobalt, whereas others have received less attention. Through the lens of assemblage thinking we can see the power relations underlying this process; the dominant discourse is not a coincidence but rather a result of strategic considerations. Responsible cobalt sourcing initiatives and international media largely focus on the artisanal cobalt mining sites and the issue of child labour in particular. A research by Resource Matters (2019: 6) demonstrates that this focus on artisanal mining and child labour has simultaneously resulted in a lack of attention for industrial mining and the issues taking place in this sector, including issues of corruption and severe mining pollution. This has in turn influenced what is largely understood as 'clean' and 'responsible' cobalt (ibid.). Although companies along the cobalt supply chain have taken action to include risk management systems for child labour, they often lack a strategy to manage for example the risk of corruption (idem: 5).

A huge issue that has been underreported on in comparison to child labour in artisanal mining is the issue of corruption in industrial mining. The Swiss multinational mining company Glencore, one of the largest producers of cobalt, plays an active role in setting the boundaries of the governance debate. Glencore emphasizes that poverty is the cause of artisanal mining, and that "as a responsible miner, we do not tolerate any form of child or forced labour" (Glencore, 2021). As a part of their approach to responsible sourcing Glencore has also recently joined the Fair Cobalt Alliance, aiming to contribute to the ASM transformation (ibid.). However, contrary to these responsible sourcing practices, Glencore continues to play a role in the controversial corruption issues around the Israeli businessman Dan Gertler (Resource Matters, 2019: 24). In 2017 Gertler was sanctioned by the US for a range of corrupt mining deals, including deals with his close friend President Kabila in which he paid millions of dollars in return for receiving mining licenses (Callaway, 2018: 8). Between 2010 and 2012 the DRC state lost an estimated \$1.36 billion due to deals linked to Gertler's companies (Global Witness, 2017: 10). This is only a portion of the money the DRC state and its population lose to corruption every year (ibid.). However, despite the corruption sanctions against Gertler, Glencore continued its payments to Gertler

in order to avoid the risk of losing their mining assets (Zeuner, 2018: 4). In contrast to their emphasis on their role as a responsible miner in the ASM transformation, Glencore did not respond to Resource Matters' questions and denies all of the corruption allegations. While shutting down debates on corruption in industrial mining the debates on child labour in artisanal mining are encouraged, further defining the boundaries of the responsible cobalt assemblage.

Filmmakers Flummerfelt and Lloyd-Davies (2021) share another story that is not new but is strikingly underreported on as well. They shed light on a research demonstrating the connections between mining pollution and birth defects in the Katanga region. Women living near industrial cobalt mining sites have a high risk of giving birth to a baby with a birth defect, such as cleft lip and cleft palate. Whereas the researchers have been working on this issue for a while, international media has failed to report on this pressing issue in industrial mining due to its one-sided coverage of artisanal mining. Furthermore, as this narrative is not convenient for the industrial actors owning the mining concessions and the governmental actors responsible for controlling these areas, they are actively preventing other actors from reporting on this issue. Flummerfelt and Lloyd-Davies share that while filming the documentary revealing this issue, the mining companies in accordance with Congolese security forces violently stopped the crew from filming, going as far as detaining one of the crew members without any legal grounding to do so (Studio 9 Films, n.d.). This story painfully demonstrates how powerful actors are able to influence what stories are told and what stories are not (Pulitzer Center, 2021).

The underreported issue of mining pollution touches upon another narrative in which the practice of anti-politics can be identified: the narrative of cobalt being promoted as an essential element of the clean energy transition. When taking a close look at the environmental and human costs of cobalt extraction it becomes clear that this debate has not become dominant coincidentally either. There is a paradox in this debate that unveils who benefits and who loses from the encouragement of this debate. The paradox of the critical minerals necessary for the clean energy transition, including cobalt as an essential component of the rechargeable lithium-ion batteries, concerns the fact that there are huge environmental and human costs that follow from the extraction and production processes of these minerals. Pitron (2018) sheds light on this dark side of clean energy and the inherent limitations of 'sustainable mining'. In contrast to the mainstream narrative of clean and green energy, the mining industry is actually the second most polluting industry, mainly due to the large amount of chemicals and water necessary for mining operations (idem: 33-34). These environmental costs lead to both long- and short-term human costs. For example, long-term exposure to cobalt can result in miners getting the lung disease known as 'cobalt lung' or 'hard metal lung disease' (Hoex et al., 2021: 19). The connection between mining pollution and birth defects elaborated on above demonstrates the human

costs that can be identified on the short term. Despite the known costs, the industries dependent on these minerals continue to focus on the narrative of clean energy technologies, and the corresponding dependence on the DRC as the provider of cobalt powering these technologies, as the sole solution for the necessary energy transition. This leads to a vicious circle in which the minerals necessary for a sustainable future increase the unsustainable practices they are supposed to solve. Alternatives such as investigating the cobalt mining reserves in Europe or the obvious solution of decreasing consumption patterns in order to decrease the cobalt demand are kept in the dark (Arian et al., 2021). Through this section I have demonstrated how the actors of the assemblage have been able to make the narratives that are convenient for their activities resonate and receive international attention, whereas the inconvenient narratives are actively shut down.

5.2. The responsible cobalt (re)assemblage

All the above practices of assemblage have demonstrated the changing dynamics of the boundaries of the responsible cobalt assemblage. Through exploring the last practice, reassembling, I will demonstrate how new elements have been included in the assemblage, how their inclusion has been normalized, and how this in turn has led to new frictions. This supports Nail's (2017: 26) argument that the external relations and the concrete embodiment of an assemblage are mutually transformative. In the changed context characterized by increased sustainability pressures and the clean energy transition there are two concrete elements that have been included in this assemblage, whereas they were previously excluded from the cobalt governance: artisanal mining and industrial actors.

The problematization of ASM has previously led to actors excluding ASM from their cobalt supply chains. This has not just been the case of cobalt, but for artisanal mining in general. For example, in the case of 3TG the Dodd-Frank Act in the US led to a de facto embargo on artisanal 3T mining from the DRC. This unintended consequence of the responsible sourcing regulation had devastating consequences for the livelihoods in the DRC dependent on artisanal 3TG mining (Deberdt & Le Billon, 2021: 7). Partly due to the lesson learnt from this situation, and as a response to increased mineral demand, a shift has taken place from disregarding ASM to incorporating ASM in supply chains (Fairphone, n.d.-b). Whereas previously it was merely the challenges of ASM that received attention, there is now a lot of attention for the developmental potential of ASM. ASM has thereby become a main focus of responsible sourcing efforts, and an important element that has been included in the responsible cobalt assemblage (Johansson de Silva, 2019: 10). However, incorporating ASM on LSM sites leads to new tensions as well. In order to join the formal ASM structures miners have to comply to access payments and safety measures (Katz-Lavigne, 2020: 5-7). Miners that are not willing or able to do so are excluded, further enlarging the gap between those benefitting and those losing from

formalization measures. As Katz-Lavigne (2020: 8) demonstrates, this leads to new and heightened tensions between artisanal miners and large-scale miners.

The big role of industry actors is also a relatively new element that has been included into this assemblage. As I have elaborated on in chapter two of this thesis, the global character of the cobalt supply chain in combination with neo-liberal reforms has led to hybrid-governance formations including both state and non-state actors. This is further exemplified by the OECD, who encourages the “sustainable corporate engagement in the mineral sector” through the Due Diligence Guidance and its supporting reports. This has also influenced a shift from mandatory to voluntary initiatives aimed at responsible sourcing (Deberdt & Le Billon, 2021: 1).

A shift has also taken place from a discourse focussing on conflict-free minerals towards a discourse on responsible supply chains. In 2016 Vogel and Raeymaekers wrote about the ‘conflict minerals’ campaign in the DRC and the role of the transnational corporate-governance coalition in reforming the DRC’s 3T mining sector. Although this is still a highly relevant debate, a shift has taken place in which the minerals necessary for clean energy technologies, and with a specific focus on cobalt, are now receiving more attention than the conflict minerals (OECD, 2021a). Simultaneously, a shift is taking place from a limited requirement of minerals being conflict-free to an increased emphasis on responsible supply chains, including the guarantee of human rights protection. Whereas in 2016 the debate focussed on the ‘conflict minerals’ campaign, today the debate focusses on a ‘responsible critical minerals’ campaign. Together with the above element of the inclusion of industry actors, this fits into the pattern of corporate actors being reframed as developmental actors (Schouten & Miklian, 2020: 416).

The inclusion of the new elements of ASM and industrial actors, along with changing key terms such as the shift from conflict-free to responsible minerals, has created new possibilities as well as new tensions, as the above sections have already largely demonstrated. These new elements first of all enable the debate around cobalt to receive international attention, confirming the necessity of international initiatives in this region. Due to the shifting focus from conflict minerals to responsible minerals, together with the shift towards clean energy, the actors involved have been able to rearrange themselves towards the responsible cobalt assemblage. However, due to the tensions that arise simultaneously with these possibilities, critiques have been raised regarding the question by whom and for whom responsible sourcing initiatives focussed on ASM formalization are designed. This in turn raises awareness about the effectiveness and the possible unintended consequences that follow from these initiatives.

The practice of reassembling demonstrates the continuously shifting and complex landscape of power relations that play a role in the supply chain of cobalt originating from the DRC (Sovacool, 2020: 272). In this section I have explored how in the current responsible cobalt assemblage the inclusion of the elements of ASM, industrial actors, and a responsible sourcing narrative has been normalized, enabling a new agenda in line with corporate governance. However, the constantly changing nature of assemblages reminds us that new elements will continue to be included and excluded through the practice of reassembling.

6. Conclusion

Through this thesis I have demonstrated how a diverse set of actors have been able to align their economic interests in securing their cobalt supply with the public pressure for sustainability reforms under the realm of working towards the common goal of 'responsible cobalt'. Through exploring the six practices of assemblage as set out by Li (2007) I have unpacked how and why the responsible cobalt assemblage holds together and how it acts, thereby highlighting what the effects and consequences of this assemblage are. Drawing on these practices, it is now possible to give an answer to the central question of this research: *How does the label of "responsible sourcing" enable a diversity of actors to govern the local realities of artisanal cobalt miners involved in the cobalt supply chain originating from the DRC?*

First of all, the responsible sourcing label has created an overarching common goal that enables the actors involved to align their diverse objectives. Whereas before 2016 the actors mainly tried to achieve their objectives separately, state, and non-state actors have now actively formed partnerships and alliances aimed at making the cobalt supply chain responsible and sustainable. In the face of this common goal a range of alliances, including the Fair Cobalt Alliance, the Cobalt Action Partnership, the Mutoshi project and EGC, have emerged. These alliances have created a dominant narrative with a simplified problem definition and proposed solution in line with their objectives. Artisanal mining, the hazardous working conditions, and the presence of children in the mines function in this narrative as the simplified problem definition that legitimizes the interference of mining companies, international NGO's, and the DRC government. They all emphasize the necessity of formalizing the artisanal mining sector as the solution to this problem. Through mainly foreign, top-down designed due diligence and traceability mechanisms the industry, international experts and governmental actors leading these initiatives control how and where artisanal mining takes place, arguing that this will increase transparency and eliminate child labour. There are nevertheless limitations to these mechanisms that are obscured through the narrative of responsible sourcing, making it seem as though these reforms are equally beneficial for everybody involved in the cobalt mining sector in the DRC.

Second of all, the responsible sourcing label enables the actors of the assemblage to use a discourse that legitimizes their actions. Through using a discourse that resonates with both economic objectives and sustainability practices, the actors have been able to frame successes and hide tensions. Whereas pilot projects are framed as successes, thereby enabling actors to expand their ASM formalization efforts, the on the ground effects remain limited and at times even controversial. Although formal mining can improve miners' health and safety, it simultaneously deprives miners of their flexibility and negotiation power. On the one hand this disincentivizes artisanal miners to join formal mining structures, making them in turn less successful. And on the other hand, formal mining enables

industrial and governmental actors to control artisanal miners, through setting fixed cobalt prices negotiated between cooperatives and companies and through creating fixed mining locations negotiated between the government and mining companies. This reinforces power imbalances in which industrial and governmental actors set the boundaries for how and where local mining communities operate. Furthermore, the actors of the assemblage have been able to actively encourage certain debates and shut other debates down thereby determining what stories are being told and what stories are not. Whereas before artisanal mining was excluded from supply chains, it is now actively being included and has become the main focus of international interference. However, this focus on the issues taking place in artisanal mining simultaneously obscures the issues taking place in industrial mining, including large-scale corruption and severe mining pollution. Furthermore, including the elements of corporate governance and responsible sourcing rather than mere conflict prevention has enabled reforms in line with the objectives of industrial and government objectives. The stories that are shared are those that are convenient for the powerful actors involved, while they actively prevent international media from reporting on the stories that are inconvenient for their activities.

Through this thesis I have demonstrated how assemblage theory and Li's practices of assemblage provide the tools to address the contradictions in the dominant narrative of responsible cobalt sourcing and to unveil how government and industry actors are able to govern the local realities of artisanal miners. Throughout all the practices a pattern can be identified in which the responsible cobalt label obscures the limited effects on the ground, whereas corporate actors and governments benefit and build on this label. However, assemblage theory does not provide us the tools to look at potential openings for change in favour of the actors now excluded from the assemblage. Assemblage theory focusses more on the past and the present than on the future. Future research would benefit from including the perspective of the local mining communities more and thereby taking the next step in analysing how artisanal miners can transform the assemblage and become active participants. While in this thesis I have analysed the practices of the actors of the assemblage, future research could complement this through analysing the practices of the actors excluded from the assemblage.

In order for multistakeholder initiatives to have the positive developmental effect on the ground they claim to be their goal, the contradictions raised in this thesis need to be acknowledged and addressed and the perspectives of the people living these realities need to be included. At this moment the responsible sourcing label and the actors' commitment to clean cobalt risk missing out on this opportunity for change and instead paradoxically reinforce existing power imbalances.

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