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Agency in Circular City Ecosystems—A Rationalities Perspective

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Abstract: The concept of agency is increasingly used in the literature on sustainability transitions. In this paper, we add to that discussion by arguing that the concept of rationality opens new avenues to theorizing relational agency in transitions toward a circular economy. To this end, we compare rationality conceptions from management (e.g., collaboration and competition) with critical theory perspectives on rationality (e.g., instrumental and communicative rationality). This leads us to develop a typology matrix for describing plural rationalities underpinning relational agency. We illustrate this typology using excerpts from an in-depth case study of an ongoing city-coordinated ecosystem that develops a smart technology-enabled urban area based on the principles of circularity. The first contribution of this interdisciplinary paper is to offer a rational perspective on theorizing the antecedents of relational agency in circular economy transitions, where communicatively rational action enables agency and change. Secondly, our paper contributes to the literature on circular cities through conceptualizing circular transition as simultaneous collaboration and competition. Thirdly, our paper introduces a dyadic perspective on rationality to the literature on coopetition and provides an operating space from which professionals can navigate, depending on the type of coopetitive situation.

Keywords: coopetition; collaboration; competition; rationality; agency; relational agency; smart circular city development; circular economy; ecosystems

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1. Introduction

The past 20 years have witnessed a rise in academic interest across the social sciences in exploring the transition dynamics required for societal systems to shift toward greater degrees of sustainability. This body of work is labeled as the sustainability transitions literature [1,2]. This is not a uniform body of knowledge, however, nor is it represented by a distinct theoretical framework. The field encompasses a variety of theoretical frameworks spanning the social sciences, including but not limited to political science, sociology, sustainability science, psychology and management. [1,3–5]. Despite these developments, the study of sustainability transitions is critiqued for lacking thorough analyses of agency, particularly in regard to individual levels of analysis [6–10].

One particular application of sustainability transitions is the systemic shift toward a circular economy. A recent review posited that, while often referred to, the concept of a circular economy is actually defined in 114 different ways in the academic literature [11]. The review's authors critically observed that such a proliferation of concepts might, in the long term, become counterfactual toward the development of a circular economy. In this paper, we align with the most-often used definition of a circular economy [12]: the one provided by the Ellen MacArthur Foundation [13] (p.7) which states "[CE] an industrial system that is restorative or regenerative by intention and design. It replaces the 'end-of-life' concept with restoration, shifts towards the use of renewable energy, eliminates the use of toxic chemicals, which impair reuse, and aims for the elimination of waste through the superior design of materials, products, systems, and, within this, business models." Many countries and cities have adopted roadmaps for a circular economy, such as Finland and its second-largest city, Espoo, which is the case example studied in this paper.

In the transition toward a circular economy, numerous actors across a society's public and private sectors need to simultaneously collaborate and compete. In order to address such a multilevel, multi-actor setting, the notion of an ecosystem [14,15] has emerged as a means to develop circular economy-based operations, be they in business, industry, or urban settings. Autio and Thomas [16] defined an innovation ecosystem as a construct to highlight interdependencies between organizations and provide a fresh way to think about specialization, coevolution and co-creation of value. However, little is known about the processes by which innovation ecosystems emerge. Only recently have researchers started to consider whether and how organizations could initiate and proactively shape innovation ecosystems and what the role of agency in ecosystem emergence and development is.

In the study of circular economy ecosystems, there are similar calls to explore agency [17]. While the concept of agency has been studied at individual and collective levels of analysis [18], we are interested in relational forms of agency [19,20] and thus view agency as occurring between individuals. Such a perspective is particularly salient in the context of ecosystems as well as urban development, which are recognized for their relational properties. From the perspective of relational sociology, agents are always located in a multiplicity of social relations. Burkitt [19] (p. 322) views agents "as interactants, ones who are interdependent, vulnerable, intermittently reflexive, possessors of capacities that can only be practised in joint actions, and capable of sensitive responses to others and to the situations of interaction."

In this paper, we take up the calls to study agency in circular ecosystems and transitions by exploring relational agency from the perspective of its antecedent: rationality. We view rationality as an epistemic and ontological presupposition that coordinates the agency of multiple actors working together in an emerging ecosystem. While the concept of agency is increasingly used to explore sustainability transitions [6,21] structuration theory [22] has dominated this discussion [9]. We argue that the concept of rationality opens new avenues to theorizing relational forms of sustainability agency. We elaborate our understanding of the concept of rationality by importing ideas from management research and critical theory, particularly exploring the potential of communicative rationality of Habermas [23].

Based on this theoretical background, we develop a theoretical model of rationality. We bridge the Habermasian perspectives on rationality (i.e., instrumental and communicative rationality) with the predominantly economic rationality conceptions from management (i.e., collaboration and competition). The concept of coopetition has, in recent years, been developed to illuminate circumstances in which competitive and cooperative logics and rationalities exist simultaneously [24]. While coopetition has thus far been studied in the domain of strategic management [25], we explore coopetition in the broader context of sustainability transitions.

Following an abductive research design, we apply the theoretical model to an in-depth case study of an ongoing, city-coordinated innovation ecosystem in the city of

Espoo. The Smart and Clean Kera project develops a smart technology-enabled urban area based on the principles of a circular economy. We engaged in 21 interviews with the project-steering group members, a core group of the innovation ecosystem. We were interested in how individuals in the steering group describe relational agency in ecosystem development and the underlying rationalities therein. A fine-grained description of how the different types of rationalities are at play and coordinate activity in the innovative collaboration of public and private organizations gives evidence of the multidimensional rationalities of organizations coopeting to create sustainable value in the context of the emerging circular economy ecosystem, those being the initial formation of the ecosystem, setting of the sustainability objectives and achieving concreteness for realizing a circular urban area.

This paper's first contribution is to offer a rational perspective on theorizing relational agency in circular economy ecosystems and, more broadly speaking, transitions toward a circular economy. To the best of our knowledge, a rational perspective has hitherto not been addressed in these fields of work. This paper introduces a typology matrix to structure and operationalize the concept of rationality in circular ecosystem development. Our typology thus offers a fresh perspective to the literature by showing that specifying the multifaceted concept of rationality can be helpful in theorizing agency in circular sustainability transitions.

Secondly, our paper contributes to the literature on circular city debates [26,27], namely through conceptualizing circular city development as simultaneous collaboration and competition. It pays attention to their various forms of coexistence under the frame of coopetition in particular. In their planning and development practices, cities have to constantly navigate between various collaborative and competitive orientations to promote sustainable and collaborative, yet also competitive, urban development [28]. This article contributes to the understanding of cities operating in multiple and overlapping governance networks increasingly fueled by coopetitive action orientations by introducing a new dimension to the prevailing economic rationality: the communicative rationality. In doing so, it offers a promising avenue for future research on the forms and antecedents of coopetition in the field of circular city development. In parallel, the typology offers a framework to address the dyadic rationalities of coopetition in urban ecosystem governance.

2. Competition, Collaboration, Coopetition—Quo Vadis?

The classic roots of strategy and strategic management rest on competitive logic. In economic theory, competition is viewed as the driving force for commercial activity. All the while, an increasingly complex global marketplace has led firms to a situation where they need to both cooperate and compete. As an illustration, half of all cooperative relationships occur between competitors [29]. Similar developments characterize the field of urban development [28,30]. The term coopetition describes the situation where two actors simultaneously collaborate and compete. Co-opetition is "a strategic and dynamic process in which economic actors jointly create value through cooperative interaction, while they simultaneously compete to capture part of that value" [25] (p. 591). Before the concept of coopetition was coined, competition and cooperation were treated separately in describing relationships between firms [31]. Research on either competition or cooperation did not address the full picture of firms' competitive and cooperative interdependencies; in particular, the positive impact of the other was not addressed [32]. In other words, while research on interfirm collaborative arrangements underestimates the competitive dynamics involved, research on competition considers cooperation as a market imperfection and does not consider the positive impact of cooperation on competitive dynamics.

Over the years, the phenomenon of firms simultaneously competing in one area while collaborating in another has been recognized in some fields of management without being termed coopetition. Beyond the study of interorganizational relationships, be they

alliances [33] or networks [34], this includes strategic management [35], relationship marketing [36,37] and supply chain management [38]. Jorde and Teece [39] argued that the simultaneous pursuit of collaboration and competition has implications for corporate strategy and public policy. Hunt [36] observed that when adopting relationship marketing strategies, firms have to cooperate to compete. Thus, in order to be an effective competitor, a firm needs to be an effective collaborator as well.

In competitive logic, organizations pursue divergent interests, as each seeks to pursue higher profits at the expense of competitors [32]. Similarly, for individuals, the guiding principle behind competitive behavior is that individuals seek to maximize their own self-interest [40,41]. The perspective on human behavior is one of strategically rational, ego-centric action. In such a situation, instead of collaborating, individuals will compete with one another in order to achieve what is in each individual's best interest.

In contrast, the guiding principle behind cooperation is that individuals participate in a mutual action in order to achieve shared goals. Cooperative logic is thus based on convergent interests, achieving common goals by means of collective action. In cooperative logic, the focus is on collective goals instead of individual-level goals. In a similar vein, the focus is on collective forms of action instead of individual actions. Axelrod [42] argued that it is the social structure surrounding individuals that explains why they act collectively in pursuit of win-win scenarios. Thus, individuals' interests and motives for action are not considered to explain collective, collaborative action [29].

Coopetitive relationships have the potential to enable the gaining of market power, innovation processes or a new business model [43,44]. However, when firms cooperate and compete simultaneously, the firms' relationship is complex, as they need to adopt conflicting roles [45]. The simultaneous pursuit of cooperation and competition leads to emotional ambivalence [46] at multiple levels. At the employee level, role conflict is to be expected [47]. In terms of managing coopetition, given that individuals can act according to one logic of interaction at a time, it has been suggested that firms should divide tasks in the relationship according to their competitive vs. collaborative ethos [47].

The task of conducting coopetitive relationships has been found to be fraught with managerial paradoxes and tensions, whether in industrial or urban development contexts [30,46,48]. Coopetitive interfirm relationships are likely to involve significant tension, particularly regarding interorganizational knowledge sharing and learning [47], such as in alliances [49,50]. Based on a review of existing research, Tidström [48] found that tension in coopetitive relationships can exist in relation to roles, knowledge, power and dependence, as well as opportunism. The notions of coopetitive practices [51] and coopetitive mindsets [52] have been introduced.

Given the complexity of relationships in coopetition, we recognize the need to extend our understanding beyond seeing coopetition as a strategy to gain market power, an innovation process or a new business model [25,44] where economic actors create and compete for value [25]. We need to look in depth at the basic principles of social theories which lie behind individual, social and organizational activity. Next, we proceed to an overview of the research on rationality.

3. Rationality in Organization Studies

Assumptions about the presence or absence of rationality and the types of rationality have been key to virtually all conceptions of organizations and organizational research. While organization theory is divided over this concept [53], most of the strategic management literature is based explicitly or implicitly on the assumption of some form of rationality.

3.1. Instrumental Rationality: The Rational System Model and the Economic Man

The traditional 1960s approach to organizations relies on Max Weber's writings on rationalization and its impact on organization structures [54]. According to Weber's instrumental rationality (or similar approaches, such as Mannheim's functional rationality), actors make rational choices to achieve their own ends through the most efficient means possible (ibid.). In this sense, rationality comprises a high level of calculability and predictability of organizational decision-making and procedures. The so-called rational system model conceptualizes the organization as an instrument or tool designed to achieve a specific goal or cluster of related goals [55].

Economists similarly equate rationality with utility maximization, a particularly stringent form of rationality in which individuals seek to maximize their expected utility [56]. According to Simon [57], the economic man paradigm—the individual as utility and profit maximizer—is the most important export from economics to the other social sciences. This view is also evident in the current literature on coopetition, where profit maximization is the underlying rationality both in competition and collaboration.

3.2. Soft Rationalities

As a critique to the rational system model, the literature has tended to turn from the hard rational conceptions of the rational model and economic man to an awareness of other theoretical and empirical forms rationality can assume [54]. The concept of bounded rationality [58] introduced the idea of the administrative man as the satisficer rather than the maximizer, whose rational decision-making capacities are bounded by the cognitive and organizational limitations of information processing: uncertainty, limits in information and complexity. However, the underlying premises of rationality (as a rational systems model) remain largely intact in the concept of bounded rationality [54] (p. 396).

Soft rationalities, like the political process [59] and garbage can models [60], assume that rationality is more fluid than the preconditions of the rational system or economic models assume. The garbage can model describes organizations or decision situations characterized by three properties: ill-defined and inconsistent preferences or goals, unclear technology or poor understanding of an organization's processes and fluid participation, as participants vary in time and effort [60]. The departure from the rational system model, with its clearly defined goals, its view of organization structure as the means for their realization and its highly calculative decision makers, is clear, but the garbage can model still assumes instrumental rationality or calculability and predictability, albeit under fluent and ambiguous conditions.

The political type of rationality puts the internal politics of organizational life at center stage. In the early 1970s, a number of writers stressed the importance of the centrality of resources to the internal power structures of organizations. For example, Allison's [61] political model was proposed as an alternative to the neoclassical rational actor model of the firm. Pfeffer [59] elaborated on these views to form a theoretical lens, which was juxtaposed against rational model approaches to organizations. Pfeffer's work emphasized the push and pull of influence, the shifting natures of coalitions and the techniques used to enhance one's position in a competition for resources. Power and authority have traditionally been considered as alternatives to rationality in social explanations [62].

From the 1980s onward, the rational system model, economic models of rationality, basic means-end logic of traditional strategic planning and political views have steadily given way to new forms of rationality. This means preserving the classical rational system and economic models but incorporating many other distinctive conceptions or forms of individual rationality identified within the social, economic, political and cognitive sciences [62]. The organization was also identified as a plurally rational agent.

3.3. Practice and Language Views of Rationality: Habermas's Communicative Rationality

Drawing on the practice turn in social theory, social theorists such as Bourdieu, Foucault, Giddens, de Certeau and Vygotski all contributed to the questioning of the systemic and deterministic approaches that dominated American sociology until the end of the 1970s [63]. Most emphasized the practical accomplishments of skilled social actors in the production of social life and the centrality of knowledge to the production and reproduction of the social world (ibid.). These social theorists claimed that there is a practical rationality rooted in the concrete detail of daily life. The everyday is where we enter into a transformative praxis with the outside world, acquire and develop communicative competence and actualize our normative conceptions. The strategy as practice approach aims to incorporate these foundations into strategy and strategizing. In the organizational discursive perspective [64–66] discourses are linguistically mediated constructions of a social reality. They are important means through which beliefs, values and norms are reproduced and at times transformed in one's social life [67].

From the perspective of rationality, the focus on language is interesting, because the use of language is fundamental for social activity. Habermas [23,68] in particular pointed out that social rules and institutions emerge and change by means of communication. In *The Theory of Communicative Action* [23], Habermas drew a distinction between strategic action, in which actors seek to achieve their own goals, and communicative action, which is based on mutual agreement on actors' goals. This communicative rationality emphasizes speech and language as a means of reaching understanding, as opposed to the fixed goals and understanding of instrumental rationality. Under instrumental rationality, actors may either compete or cooperate with each other, according to whether they each believe that competition or cooperation would be most likely to achieve their individual goals. By contrast, communicative rationality involves consensus that goals are worthy of working toward in cooperation. Here, Habermas followed the linguistic turn in philosophy where it is proposed that the central task of philosophical analysis is the analysis of language use and the communicative conditions. By paying attention to the people participating in decision-making and negotiation, the discursive and dialogical views allow for a fine-grained understanding of the different rationalities playing out in social processes.

Habermas aimed for a pluralistic model of rationality. In strategy research, such a process has been considered beneficial for understanding contemporary organizations [69–71]. Within organization studies, interest in Habermas's theory has remained rare. His theory deals with democracies and free discussion, which have been presented by Habermas himself as incompatible with management or hierarchical organizations [72]. All the while, this perspective has been found to be both conceptually possible and helpful for practitioners (ibid.). In this paper, we adopt Habermas's perspective on rationality as a means for dealing with the demands of transitioning toward a circular economy.

4. In Summary: Theorizing on the Rationalities of Collaboration and Competition

In this section, we draw on both the above-presented theory on competition and collaboration as well as rationality in order to develop a theoretical model along two dimensions which juxtaposes the Habermasian model of rationality (instrumental–communicative rationality) on the vertical axis against coopetition (collaborative and competitive action orientations) on the horizontal axis. The theoretical model is presented in Figure 1.

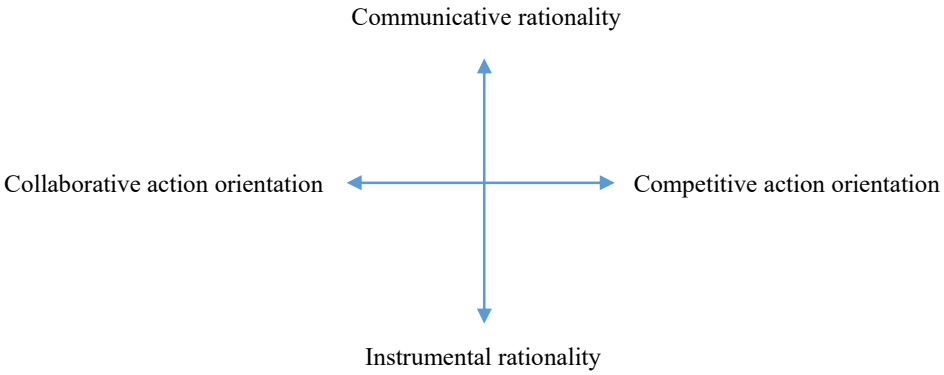

Figure 1. Preliminary theoretical model.

Regarding the horizontal axis, collaborative action orientation follows from the fact that resources span organizational boundaries and that interorganizational relationships are sources of collaborative advantage. In this setting, individual action is based on convergent interests and the achievement of shared goals. In contrast, competitive action orientation means that organizations pursue divergent interests, as each seeks to pursue higher profits at the expense of competitors [32]. Individuals will compete with one another in order to achieve what is in each individual's best interest.

Regarding the vertical axis, instrumental rationality presupposes the economic man rationality [57], where actors make rational choices to achieve their own ends using the most efficient means possible [54]. Mutual coordination is mediated by power and money, and the actors are free to maximize their own self-interest [23,68]. In contrast, communicative rationality is characterized as the efforts of participants to coordinate their actions through the construction of an agreement around a shared situation. A distinctive characteristic of communicative rationality is a critical and reflective attitude of existing systems, giving scope to openness and possibilities for change [68].

We used the above model to guide our case analysis in order to investigate the relationship between rationality and agency in the context of circular economy ecosystems. In such a setting, we acknowledge that agency takes a relational form.

5. Materials and Methods

The context of the case study was the Smart and Clean Kera project (2019–2021), a development project aimed at transforming an old industrial area in the city of Espoo. As part of its strategy, the city of Espoo has an ambitious program for sustainable development, with strategic goals set for 2017–2021. The city is part of an international network of front-runner cities committed to achieving the United Nations' sustainable development goals by 2025. For this purpose, together with local firms and other stakeholders, the city is engaged in proactively developing solutions for a future, carbon-neutral urban life.

The Smart and Clean Kera project is one of the lead projects on this front. The Kera area will be transformed from a logistics area into an urban walking- and cycling-oriented local center of 14,000 residents. Circular solutions will be combined with new digital solutions and applications. The Kera area will feature, for example, new energy solutions, modes of transport and urban food production as part of a circular economy-based urban environment. A subproject develops a sharing business model for a digital smart city. An additional objective of the Kera project is the creation of a new codevelopment model for urban development based on collaborative project management for the design, construction and development of functional city areas (i.e., the Espoo model).

Preparation of the Kera development started in 2016, and the Smart and Clean Kera project was formed by the city of Espoo and ten large-scale companies in 2019 to manage the development of the Kera area. The project's steering group started by setting objectives for the emerging smart circular ecosystem and formed a core team for the ecosystem. By 2020, the ecosystem had developed to include over a hundred collaborating organizations. The growing trust network provided the ability to quickly take in outsiders and thus connect to a spectrum of the entire ecosystem.

The findings presented in this paper draw on an exploratory case study with the objective of preparing a multi-case study at a later stage. The interviewees were selected based on their membership in the steering group, because their collaboration as the locus of relational agency and rationality was the unit of analysis. The duration of the interviews was one and a half hours. The interviews were collected in a first round in the fall of 2019 (n = 12) and in a second round in the fall of 2020 (n = 9), totaling 21 interviews (see Table 1).

Table 1. Interviewees.

Stakeholder	Interviews 2019	Interviews 2020
Espoo City: ecosystem leader, urban planner	3	2
Integrated project delivery provider	1	1
Housing development entity	1	N/A
Energy systems provider	1	N/A
Insurance company	1	1
Digital technology systems provider	1	1
Construction rental services provider	1	1
Wholesale corporation	1	1
Circular economy expert	1	1
Circular economy expert	1	1
	Total 12	Total 9

We used semi-structured interviews and an ethnographic style of interviewing with the aim of entering the respondent's world [73]. The researcher's role as an active listener allowed for eliciting further information through follow-up prompts. The open-ended interview method was chosen for the purpose of building a theory on our central concepts, rationality and agency, as expressed by the steering group members. Interview themes covered the emergence, organization and interactive culture of the Kera project. The interview questions addressed interactions in project meetings and ecosystem work, thus also enabling the investigation of communicative types of rationality via a discursive perspective. The unit of analysis was the steering group members interacting relationally with one another in furthering the development of the Kera ecosystem.

The data was analyzed using abductive reasoning [74], where a framework is already included or supposed to be known as a premise. In this case, the theory-driven model connecting rationality with collaboration and competition (Figure 1) was adopted as the framework for making analytic inferences. In this study, rationality was studied and understood as an antecedent to agency. Thus, we viewed rationality as an epistemic and ontological presupposition that coordinated the agency of the members in the Kera steering group. The central question for analysis was what kind of reasoning and presuppositions were described by the interviewees and how relational agency resulted through their joint actions and responses in emergent project situations.

6. Results

The analysis of the interview data demonstrated several different instances of competitive or collaborative action orientations and underlying rationalities in use in the studied Kera steering group during the one-year studied interval. The findings were positioned according to the theoretical model, resulting in a typology matrix (Figure 2).

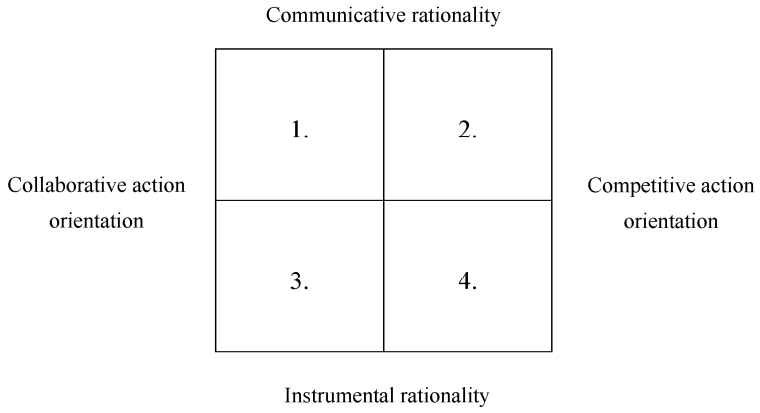

Figure 2. Typology matrix.

6.1. Emergence through Communicative Collaboration (Quadrant 1)

Dialogue was described as a precondition for the formation of the Kera project, as the interviewees mentioned the importance of discussions. The discussions took place at different levels and had various contents, such as goal setting and technical discussions. The topic of a circular economy provided the space to engage in intelligent dialogue between the city, residents and businesses. This observation reflects communicative rationality, which relies on inclusive and agreement-orientated argumentation and dialogue. An interviewee described the early-stage discussions as

> ".. a step-by-step, an emergent process of conversations over time that can lead to something, sometimes nothing." (Interviewee 9/2019)

In the initial phase before the Kera project formally started, so-called strategic discussions were held to identify the group of interested organizations for the project. An interviewee described them as learning to speak the language of the other's strategy:

> "I read the companies' business strategies, I speak their strategy language. I have experienced that it's a pretty good and quick way to increase your understanding, if you understand each other's goals, and the strategies." (Interviewee 9/2019)

Reflecting a simultaneous collaborative action orientation, the participants were able to produce common views and decisions in the beginning of the Kera project, as the following quote illustrates:

> "the project has resulted in a shared vision on an abstract level" (Interviewee 9/2020)

> "we respect the views of others even if they do not represent one's own position." (Interviewee 2/2020)

Communicative rationality in the steering group's collaboration can also be seen in the expansion of the participants' learning regarding their thinking:

> "This is a new model that hasn't been experienced anywhere and it can't be clear to anyone. And becoming conscious of this is important, it makes us feel relieved and free." (Interviewee 4/2019)

This comment points toward critical thinking, as the steering group members became aware of their current assumptions and freed themselves to create new ones. This expansion in thinking can facilitate the creation of new presuppositions as new ways of thinking of value, including sustainability. The ability of the members to become aware of their prevailing assumptions is an example of how rationality underlies agency. Communicative rationality enabled the group members to critically review and become aware of their assumptions. Agency followed from this; as steering group members were able to free themselves from their existing ways of thinking, they could act toward making a difference in the Kera ecosystem's development.

6.2. Differences Discussed via Communicative Competition (Quadrant 2)

Reflecting a competitive orientation, the findings showed conflicting situations between members of the Kera steering group. The disagreements were related to the resources, abilities and responsibilities of the member organizations. These conflicts were resolved in one-on-one discussions. This displays the communicative nature of their actions, set amid a competitive orientation:

> "We had strong differences in ideas, but the opinion changed in the direction of the prevailing opinion." (Interviewee 8/2020)

This interpretation of conflicts as communicative rationality in the steering group shows how conflictual collaboration and competition [46] is made possible under communicative rationality. This negotiation of contradictory views shows action that is coordinated through a shared situational agreement. Such differences that would have dismantled the entire ecosystem were not experienced:

> "They are understood and explained why we can't move on. Then we just realize that we need some other route …" (Interviewee 4/2019)

Assuming communicative rationality, it was possible to keep and build up relational agency despite the steering group members' competing interests. Therefore, communicative competition became a form of rationality, allowing for a "translation process for aligning interests" [75].

6.3. Paralleled with Underlying Instrumental Collaboration (Quadrant 3)

The steering group members considered that collaboration gave them access to other members' resources (i.e., ecosystem resources that subsequently helped them to succeed in global markets). The strategic intent of a company representative was instrumental, as it was based on the assumption that participating in the Kera project was related to investing in collaborative R&D in order to attain individual gains for each of the participating companies:

> "So far, this has cost us a hell of a lot. I have spent time on this, and I have taken other people involved in this work. In addition, we pay money to be involved in this project. Yes, this should be taken advantage of. A unique opportunity." (Interviewee 6/2020)

Thus, despite displaying a collaborative orientation, the underlying rationality of companies can be instrumental, particularly when seen from the perspective of a single company acting in a competitive marketplace. This does not, however, mean that the representatives of companies cannot display communicative rationality as members of the Kera steering group, as evidenced in Quadrant 4.

This is an example of dual rationalities. The steering group members indicated both instrumental and communicative rationality. These rationalities preceded agency as "sensitive responses to others and to the situations of interaction" [19]. In these situations, steering group members needed to differentiate between representing one's own company versus acting as members of the Kera steering group.

6.4. Instrumental Competition Hinders Newcomers (Quadrant 4)

Evidence of instrumental rationality and competitive action orientation was found when the steering group members had discussions with an organization willing to join the project during its course. The talks were held with a sales representative of the interested organization. The incoming representative's rationality was described as erroneous, because it was considered to be aiming for firm-focused profit without contributing to the ecosystem and sharing the risk with other participants:

> "When he comes to that conversation then he wants but to sell his company's components and products to reach this year's and the following years sales goals … that mindset is completely wrong." (Interviewee 4/2019)

The salesman's mindset (i.e., the instrumental or competitive rationality) may be appropriate in an established business ecosystem, but it did not respond well to the steering group's rationality at the stage of developing circular economy business model innovations and transformations. As a result, the newcomer was hindered from participation, and joint discussions continued with other representatives of the same company.

This illustrates a situation where individuals having opposing rationalities were not able to build sufficient relational agency that would have allowed for the continuation of their coexistence in the Kera project.

6.5. Transition from Communicative to Instrumental Rationality

In addition to the previous findings on forms of rationality, the findings also included an example of a critical transition between types of rationality (i.e., between quadrants in the typology). During the project in 2020, the interviewees discussed how the jointly agreed, rather abstract vision of Kera's circular economy goals could be transformed into more concrete, operational level objectives for the realization of the Kera project. The change in rationality is illustrated in the following quote:

> "Now we should start setting concrete monetary objectives, making contracts that firms can commit to." (Interviewee 4/2020)

This means making a transition from strategic goals to concrete actions. Not only was it difficult to translate the high-level vision to more specific, practical objectives, but most importantly, there were missing means to make a parallel transition in rationality. In other words, having first communicatively reached the goals for the Kera project, the members then indicated a need to transition toward instrumental rationality. Instrumental rationality showed itself here as the transition for making plans and contracts, using organizational hierarchies with the related presupposition of realizing the newly developed circular business models for profit.

There were barriers in making the required change toward realizing the goals of the Kera project. According to Interviewee 2/2020, there were fundamental differences in thinking between the public funding logic of the city and the private earnings logic of the companies. This illustrates how instrumental rationality was displayed differently by the collaborators. The rationality barriers posed real challenges for the steering group members in achieving not only relational, but collaborative agency in the transition toward instrumental rationality.

7. Discussion

Our paper offers three implications to extant theorization. First, we introduced a rationality perspective to theorizing about relational agency in circular economy ecosystems and, more broadly speaking, sustainability transitions. In doing so, we addressed the basic philosophical groundings of how humans act and make decisions in coopetitive settings bearing multiple possible vantage points. To this end, we combined

theory about coopetition (i.e., collaboration and competition) with Habermasian theorizing, taking into account the societal and communicative characteristics of rationality. This led us to propose a 2 × 2 typology matrix that juxtaposed the conceptions of rationality with theory on competition and collaboration to conceptualize a pluralistic model of rationality in explaining coopetitive strategizing. While previous work on agency in sustainability transitions has largely focused on the agency–structure dichotomy [22], our typology zooms into the rationalities guiding executives relationally involved in circular ecosystem development.

We analyzed rationality and agency as they manifested in the in-depth, longitudinal study of the Kera steering group, the central management core of an emerging circular city ecosystem. Following abductive reasoning, we used the typology matrix to classify the types of rationalities and their relationships to agency:

1. Communicative rationality prevailed in joint strategic discussions, enabling the setting of joint objectives and the development of relational agency. Moreover, communicative rationality enabled the group members to become aware and critically review their presuppositions together. This was a prerequisite for the members' agency, with respect to learning new ways of organizing for the circular economy ecosystem;
2. Differences were handled via communicative competition. Amid communicative rationality, it was possible to keep and build up relational agency despite prevailing competing interests. Thus, communicative competition became a form of rationality that allowed for a translation process for aligning interests [75];
3. Instrumental rationality was observed in the interviews when the steering group members emphasized getting returns for their investments in the Kera project. The steering group members needed to differentiate between representing one's own company versus acting as members of the Kera steering group. Thus, rationalities preceded agency as responses to others in different interactional situations [19];
4. Instrumental rationality aimed at competitive market behavior was found to exclude newcomers from joining the emerging ecosystem. This evidence shows a situation where individuals were not able to collectively build relational agency, owing to opposing rationalities.

This study shows how the concept of rationality is not unambiguous and straightforward, but instead a plural concept that takes different forms in specific situations during an ecosystem's development. In addition to the rationality types described in the typology matrix, a critical transition between rationalities was identified. Having first communicatively reached the sustainability goals for the Kera project, the members indicated a need for a transition toward instrumental rationality for realizing the newly developed goals into concrete actions. Differences between public and private understandings of instrumental rationality set barriers for the transition between rationalities.

Secondly, we contribute to the field of circular cities by introducing the notion of coopetition and identifying yet another important dichotomy characterizing circular city development [26]: competition and collaboration. While this field of theorization has previously highlighted the significance of multiparty collaboration [76,77], there has been relatively little work exploring the actual practice of collaborating. Taking this one step further, we argue that circular city development inherently includes both collaboration and competition. Thus, we introduced the notion of coopetition in this literature.

Based on our case study of an urban circular city ecosystem, we argue that circular city development is vested in the tension between competition and collaboration in public or private partnerships and ecosystems, studied here at a local level of analysis. In this article, we offer a fresh approach to sorting out coexisting collaborative and competitive motives by revisiting Habermas's theory and its connections to recent developments in organization studies. This approach may offer fruitful insights to circular city

development as well as urban development and planning research overall, as it acknowledges and addresses the coexistence of collaborative and competitive motives in planning openly instead of remaining stuck in the divide between explicit ideals of collaboration and implicit hegemonic discourses on competition.

Thirdly, a closer look at the coopetition literature shows that the bulk of this field of work has operated with an instrumental rationality (i.e., the economic realm in which individuals seek to maximize their expected utility) [56]. Via the Habermasian lens, our paper introduces a dyadic perspective on rationality to the literature on coopetition which includes both the communicative and strategic rationalities. Our typology provides an operating space from which professionals can navigate, depending on the type of coopetitive situation.

Despite its novelty, the paper's framework is tentative, and the paper bears several limitations. To begin with, while we identified rationalities of coopetition as a promising research area in the context of circular city development, this requires further conceptual and empirical development, as this literature was not our primary field of exploration. The many important findings of the circular city literature related to other dichotomies characterizing circular city development and its underlying rationales, such as the dichotomy between top-down and bottom-up approaches [26] as well as the constraints and challenges regarding the realization of circular city imaginaries [27], have to be scrutinized against our conceptual framework. This is, however, a task for future research. Going forward, ample opportunities exist regarding applying the framework to the context of urban studies, strategic management or the governance of wicked problems, where questions of agency and its rationality matter.

Furthermore, while we can conceptually distinguish between four quadrants in the typology, in practice, they are likely to be intertwined and often intermeshed (i.e., individuals and organizations can operate in several quadrants simultaneously). Thus, reality is likely to be messier than the neatness the quadrant categories suggest, as the findings from our case study illustrate. As an example, transitions have a processual and episodic nature [72]. Thus, strategic navigation between various situations at different points in time might become another dimension in the typology. According to Mintzberg [78], the relative importance of rationalities merely varies or changes during the unfolding of a strategy process. The coexistence of rationalities in a strategy process emphasizes the procedural nature of rationality [57], as initially strategically rationalized strategy formation can later transform into communicatively rational action at the phase of strategy implementation and vice versa, since participatory and communicative strategy-making may turn into positivist rational implementation.

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