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To cite this article: Valtteri Vähä-Savo, Jari Luomanen & Pertti Alasuutari (2021): Between rationalism and romanticism: metaphors in managing conflicting institutional logics in science and technology parks, Culture and Organization, DOI: [10.1080/14759551.2021.1969650](https://doi.org/10.1080/14759551.2021.1969650)

To link to this article: <https://doi.org/10.1080/14759551.2021.1969650>



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Published online: 19 Aug 2021.



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Between rationalism and romanticism: metaphors in managing conflicting institutional logics in science and technology parks

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ABSTRACT

This article examines how metaphors act as a semiotic resource for managing conflicting institutional logics. Due to their polysemic nature, metaphors help to bridge contending logics and facilitate their long-term co-existence without a need for a battle over dominance. Hence, *metaphors* provide a similar tool for reconciling competing logics as *images* and *polysemic targets* have been shown to offer in earlier studies. The study looks at the workings of metaphors by analysing discourse concerning science and technology parks (STPs) from the UK and Finland. The dataset includes interviews with park managers and representatives of client companies, parliamentary debates and self-presentations by the parks. The article shows how the six key metaphors used to describe STPs (the garden, the incubator, the accelerator, the conduit, the village, and the landlord) are utilized by various actor groups to reconcile the two conflicting institutional logics prevalent in the STPs: instrumental rationalism and romanticism.

ARTICLE HISTORY

Received 24 April 2020
Accepted 10 August 2021

KEYWORDS

Institutional logics;
metaphors; polysemy;
science and technology
parks; rationalism;
romanticism

Introduction

From the viewpoint of institutional logics (Thornton and Ocasio 2008; Thornton, Ocasio, and Lounsbury 2012) science and technology parks (STPs) offer an intriguing case for examining how conflicting institutional logics can live side-by-side in the same organizational field. According to the *International Association of Science Parks and Areas of Innovation* (IASP) webpage (2020), the parks bring together universities, research and development institutions, companies and markets in a professionally managed organization that aims to ‘increase the wealth of its community by promoting the culture of innovation and the competitiveness of its associated businesses and knowledge-based institutions’. The first and perhaps the best known STP is the Silicon Valley in California. The fact that STPs can be found in huge numbers around the world from the United States to Kyrgyzstan and from Germany to Kenya demonstrates that the ideas underpinning the model have resonated with people around the globe.

As the parks are expected to provide premium surroundings for profit-seeking organizations at the heart of the modern high-tech industry, they could be expected to be the forerunners of instrumental rationalization and formalization of organizational behaviour (DiMaggio and Powell 1983; Meyer and Bromley 2013; Weber 2001). In many ways, this seems like an accurate description. However, what makes the parks peculiar is that the model has also relied heavily on *romantic ideals* (Campbell 1987) of informality, sense of community and individual ingenuity, which run directly against the precepts of instrumental rationalization. As we noticed during our study,

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these romantic ideals are visible not only in the discourse concerning the parks but also in their spatial arrangements, which typically cater for various types of leisure and play not traditionally associated with workplaces. It seems that somehow the STPs have managed to combine two rival institutional logics and the divergent identities and value systems that they entail.

The article examines how the conflicting institutional logics of romanticism and instrumental rationalism are reconciled by actors involved in science and technology parks. As our analysis shows, the logics are bridged together through six key metaphors that are used to define the parks and give them meaning. At a more general level, the article demonstrates that metaphors can play a crucial role in reconciling conflicting institutional logics in organizational fields where contending logics co-exist for long periods.

The article proceeds in the following manner. First, we discuss the theoretical background of the study and introduce the specific case of the STPs. Then we move on to the data and methods of the study. After presenting our findings, we discuss the results in light of earlier literature. In the concluding section we look at the questions this article opens up for future studies.

Conflicting institutional logics

Institutional logic refers to the socially constructed patterns of cultural symbols and material practices that actors use to provide meaning to their daily activities and to provide them with persistence (Thornton and Ocasio 2008). According to Thornton, Ocasio, and Lounsbury (2012, 2), institutional logics 'represent frames of reference that condition actors' choices for sensemaking, the vocabulary they use to motivate action, and their sense of self and identity'. Institutional logics act as an identity resource both for organizations and the individuals inhabiting them (Reissner 2019). They are central for defining the interests, values and assumptions of individuals and organizations and, hence, provide the taken-for-granted rules guiding behaviour and a sense of common purpose (Greenwood and Suddaby 2006; Reay and Hinings 2009; Thornton and Ocasio 2008). Institutional logics both enable and constrain actors, without completely dictating their sensemaking (Binder 2007; McPherson and Sauder 2013; Smets et al. 2015; Thornton, Ocasio, and Lounsbury 2012, 4), which makes actors capable of using them creatively and transforming them.

Sometimes actors and organizations are faced with contending institutional logics that provide incompatible definitions of their core values and objectives (Greenwood and Suddaby 2006; Seo and Creed 2002). Multiple logics may emerge due to, for example, organizations or professionals operating in overlapping institutional spheres (Dunn and Jones 2010; McPherson and Sauder 2013) or in a fragmented institutional environment that poses conflicting demands and expectations from external actors (Binder 2007; Pache and Santos 2010). They are also a common challenge for hybrid organizations, which by their very definition comprise elements from different institutional logics (Battilana and Dorado 2010; Pache and Santos 2013). The effort to combine the business-like logic of the regional health authorities and the physicians' logic of medical professionalism in a hybrid health care organization, studied by Reay and Hinings (2009), offers a good example of the dilemmas faced in these settings. With the STPs, as a case in point, one finds a lot of variation in terms of ownership and funding structure. Yet, they are typically expected to connect the business world with the academia, and many of them aim to form links between universities, entrepreneurs, corporations, and public sector agencies (Felsenstein 1994; Hansson, Husted, and Vestergaard 2005; Link and Scott 2003; Massey, Quintas, and Wield 1992). While the STPs are faced with conflicting logics, it is difficult to connect a particular logic with a specific group of actors, as we found out during our study.

Contradictory logics may lead to the formation of competing groups within organizations, and they can be invoked to demand changes in the organizational field (Thornton, Ocasio, and Lounsbury 2012, 76–77). The emergence of conflicting logics is typically viewed as a transition time that leads either to the current logic being solidified or replaced by a new one (see Reay and Hinings 2009). However, competing logics can also co-exist side-by-side for long periods of time (Battilana

and Dorado 2010; Pache and Santos 2013; Reay and Hinings 2009; Smets et al. 2015; Wikberg 2020). The question then becomes, how are these contending logics managed and conflicts avoided.

Earlier studies have distinguished two main ways of managing conflicting institutional logics. First, actors may create very *pragmatic solutions*. Organizations may resort to decoupling in order to demonstrate adherence to external pressure by symbolically endorsing one logic, while following another one in their everyday practices (Bromley and Powell 2012; Crilly, Zollo, and Hansen 2012; Fiss and Zajac 2006). Alternatively, organizations may try to find compromises that seemingly cater for all, and allow actors following conflicting logics to hold on to divergent objectives and value systems (Reay and Hinings 2009; Oliver 1991; Pache and Santos 2010). In some cases, actors combine and blend elements of rival logics, which helps to negotiate context-specific solutions or create new hybrid logics (Binder 2007; Glynn and Lounsbury 2005; Tracey, Phillips, and Jarvis 2011). This involves finding ways to balance the requirements of different logics and dynamically shift between them depending on the situation (Binder 2007; Smets et al. 2015). Yet another option is selective coupling, which means that an organization selectively enacts intact demands from competing logics, without blending them or resorting to compromises or decoupling (Pache and Santos 2013).

Second, alongside these pragmatic solutions, actors can draw on *semiotic tools* that help to reconcile competing logics, by enabling the attachment of a wide variety of values, identities and principles to shared symbols and objectives. In a recent article Wikberg (2020) shows how various institutional logics may be bridged together through polysemous targets. This way actors with very divergent definitions of their shared objective, e.g. 'artistic quality', can still rally behind a common cause, because the target can be imbued with manifold meanings. Höllerer et al. (2013) show how images can serve a similar purpose due to their less controlled mode of meaning construction. The ambiguity and openness of images for interpretation makes them well suited to resolving or concealing inconsistencies in institutional logics. Our article argues that, alongside polysemous targets and images, metaphors constitute a third type of semiotic device that has a unique and crucial role in reconciling conflicting logics.

Metaphors are significant tools in the construction of an organizational identity (Carlsen 2016; McEntee-Atalianis 2013; Young 2001), in managing organizational change (Gioia, Nag, and Corley 2012; Gioia et al. 1994; Reissner, Pagan, and Smith 2011) and in the very act of trying to comprehend what organizations actually are (Morgan 1986). Metaphors are also central components of institutional logics as they shape the way actors conceive of their activity and infuse it with meaning (Thornton, Ocasio, and Lounsbury 2012, 45, 54). Yet, the role of metaphors in managing conflicting institutional logics has not been previously studied. Our article fills this research gap by analysing how metaphors are used to bridge and reconcile two conflicting institutional logics in the context of science and technology parks.

The definition of an STP is quite broad and expressions such as 'technology park', 'technopole' and 'research park' are used interchangeably (Ng et al. 2019). The central idea behind the model is to bring together university researchers and private companies in a professionally managed high-tech environment where the academics and entrepreneurs can exchange ideas and create innovative products (Felsenstein 1994; Hansson, Husted, and Vestergaard 2005; Link and Scott 2003; Massey, Quintas, and Wield 1992). Silicon Valley, where Stanford University established a research park for high-tech companies in the 1950s, can be considered the origin of the model (Leslie and Kargon 1996). Between 1960s and 1970s, the number of STPs increased slowly, but in the 1980s their numbers skyrocketed globally. The model turned into a worldwide fashion as local actors aimed to imitate the 'recipe' for success (Sahlin-Andersson 1996; Sahlin-Andersson and Sevón 2003; Saxenian 1994). Today there are over 400 science and technology parks around the globe (UNESCO 2018). While many STPs are private enterprises, in several countries they have been established in cooperation with local governments and with the assistance of public funding in the hopes of boosting the national or local economy (Fukugawa 2006; Hansson, Husted, and Vestergaard 2005; Phillimore 1999; Yang, Motohashi, and Chen 2009).

Following the success of STP pioneers, the image of small teams of enthusiastic high-tech entrepreneurs coming up with ground-breaking innovations in inspiring environments, largely stripped of the bureaucracy, formalism and heavy machinery of the old Fordist industries (see Rogers and Larsen 1984; Taylor 1985; Massey, Quintas, and Wield 1992), has become a globally recognized model. The strength of the concept is partly demonstrated by the way numerous STPs around the world have been named after the sanctified origin of the model (cf. Rogers and Larsen 1984, 230–231). One can find, for example, Silicon Taiga in Russia, Silicon Mountain in Cameroon, Silicon Glen in Scotland and Silicon Wadi in Israel, just to name a few of the ‘silicons’ around the world. The parks have also established an international association, the *International Association of Science Parks and Areas of Innovation*, that has taken charge of codifying and marketing the model for an ever-wider audience, as is common for international meta-organizations (Ahrne and Brunsson 2008; Vähä-Savo, Syväterä, and Tervonen-Gonçalves 2019).

What is surprising is that the STPs as a model have been so popular despite their partial divergence from the instrumental rationalist tendencies valued today in the corporate world – especially as they operate in the field of high-tech capitalist industry. Some scholars have claimed that there is a trend toward increasing rationalization and expansion of organization in modern societies (DiMaggio and Powell 1983; Hwang and Powell 2009; Meyer and Bromley 2013; Weber 2001). According to them, rationalization through the codification of general rules, standards and roles for actors is widely held as a key component of modernization and development. Similarly, explicitly defined administrative and managerial logics are taken up in organizations operating in sectors of society that may otherwise appear quite distant from each other. Efforts towards the formal organization and standardized procedures gain ground in all areas of life, and organizations become ever more elaborate in design. Corporations, charitable associations and universities all begin to be considered as purposive decision-making organizations that can – and should – be run following standardized managerial and administrative guidelines formulated by educated professionals.

However, from the viewpoint of institutional logics (Thornton, Ocasio, and Lounsbury 2012, 23), this argument overemphasizes rationalization as the dominant logic gradually overcoming every other logic and value system in modern societies. It especially misses the ‘romantic ethic’ (Campbell 1987) that is the driving force of modern consumerism and the core ingredient in several other cultural domains such as the arts, religion and sports. As Campbell (Campbell 1987, 227) notes, the cultural logic of modernity is not merely that of calculating instrumental rationality, ‘it is also that of passion, and the creative dreaming born of longing’. The only legitimate mode of activity in today’s world is not standardized actors following the tenets of instrumental rationalism. There is also room for local peculiarities, customs and identities that seem to defy the pressure of rationalization. In fact, romantic ideals are expected and celebrated in many contexts that are connected to creativity, community and emotions.

Nonetheless, it is usually expected that rationalistic and romantic logics are kept at an arm’s length from each other (Campbell 1987, 223). Romantic ideals emphasizing individualism, imagination, spontaneity and breaking the rules (Campbell 1987, 181–182) ought to be compartmentalized to their proper sphere. While the players and fans of a football club should devote their heart and soul to their team despite losses, the manager of the club is expected to keep their eye on the bottom line, make decisions based on cold economic calculations and follow proper procedures. From the managers’ perspective, the team should appear as a business endeavour where every player can be dispensed with if they turn out ineffective. While the fans and managers are united through their engagement with the team, at the end of the day they are supposed to take up different identities, follow different logics and cherish different values.

Given this, science and technology parks appear intriguing in two ways. First, the model has managed to combine rationalistic and romantic ideals in a way that is found appealing and legitimate throughout the world. Second, and more importantly, at least from the outset, these competing logics within the model do not seem to be divided between different groups of actors within the organizations. It appears that both the ‘players’ and the ‘managers’ are expected to follow and enact

both logics. This mix of rationalistic and romantic logics in STPs can be traced back to the early years of Silicon Valley. Many of the garage tinkerers and technical developers of the 1970s and 1980s, who made Silicon Valley a globally known model, were influenced by the ethics and bohemian sensibilities of the sixties counterculture in America (Cook 2020; Markoff 2005; Saxenian 1994, 29–57). According to Saxenian (1994, 29–34) these high-tech entrepreneurs cherished risk taking, creativity and experimentation, while resisting hierarchical structures and standard procedures. Although fierce competition, individualism and making huge profits were highly valued, their culture also emphasized the significance of informal socialization, solidarity and swapping ideas even with rivals. As reporters, scholars and decision-makers around the world tried to uncover the secret recipe for Silicon Valley's success, this uneasy mix of rationalistic and romantic logics got attached to the model that circulated all over the world.

This article shows how the actors involved in the parks navigate these treacherous waters by relying on metaphors. We argue that, through their polysemic nature, metaphors offer a way to negotiate contradictory identities and value systems within organizations and organizational fields. We examine how metaphors are used to reconcile rival institutional logics by analysing parliamentary debates concerning STPs in Finland and the United Kingdom, the webpages of a group of STPs from both countries, and interviews with STP managers and companies operating in these countries.

Data and methods

Our dataset is composed of three kinds of data. First, we have collected transcripts of parliamentary debates in the United Kingdom and Finland. These were collected from the official pages of national parliaments by using keywords such as technology park, science park, research park, Silicon Valley, etc., in order to identify relevant discussions concerning STPs. As a result, we identified 81 documents from Finland and 576 documents from the UK spanning the years 1967–2016. The lop-sidedness of the data in this regard is not ideal. However, it does not pose a serious problem either, as our aim is not to make cross-national comparisons or compare different historical periods based on this data. Instead, our purpose is to analyse what kinds of metaphors MPs, as a specific group of actors, use when talking about the parks in their national parliament. As our dataset includes all the relevant debates from both countries, it offers the best available material for analysing the vocabulary of the MPs in this regard, although there have been less debates in Finland.

Secondly, in 2018 we carried out interviews with managers of STPs, with the heads of companies that are located in the parks and with experts who have been involved in developing STPs. Informed consent was obtained from all the participants at the beginning of the interview. The managers and companies represented 11 different STPs: four from the UK and seven from Finland. We used semi-structured interviews to generate talk concerning the nature and characteristics of STPs. Altogether, we conducted 33 interviews: 10 STP managers (we were not able to organize an interview with the manager of one of the parks), 20 representatives of client companies and 3 experts. Most of the people interviewed were in what could be characterized as a 'traditional' science park with a strong university connection. We also contacted a few people in organizations where the university connection was no longer so strong due to some restructuring in the organization of the STP. We considered it important to include different types of parks as the STPs comprise a varied group of organizations despite carrying the same science (or technology) park label.

Thirdly, we gathered the self-presentations of the abovementioned 11 science parks from the UK and Finland from their webpages. These self-presentations were usually concise pieces of marketing work, which aimed to define what the parks do and what makes them favourable for companies and other stakeholders.

In presenting our findings, we use direct quotes to illustrate the ways of talking found in the data. We have chosen excerpts that best capture a key metaphor and how it is used to make sense of the parks. All the expressions within quotation marks in the empirical section are quoted verbatim

(statements in Finnish have been translated by the authors). Some of the quoted expressions are widely used in our data by different actor groups. Nonetheless, in order to be as transparent as possible, we have attributed each direct quote to at least one specific actor.

Although our purpose is not to conduct a cross-national comparison, gathering data from more than one country helps in avoiding two pitfalls. The first involves presuming that the discursive features found in the dataset are nationally peculiar characteristics when they may, in fact, be transnationally shared tools for sensemaking in the context of specific institutions. Secondly, if one does come across nation-specific elements, it is easier to detect their locally embedded nature when one has data also from other countries. Otherwise, one might assume these to be universal ways of understanding and describing a given institution.

We aim to capture the way the parks are conceptualized through key metaphors by the central actor groups involved: national decision-makers, representatives of the STPs and heads of the companies working in the parks. During the study, we realized that these key metaphors play a significant role in reconciling the conflicting institutional logics found in the organizational field. We are also interested in whether there are differences in the way the various actor groups make sense of the parks. Considering the contending institutional logics, it would make sense that actors with different identities and positions would use different types of metaphors. The contending logics might be divided between the different actor groups engaged with the parks. For example, the accounts of a park manager might evoke values and rationalities drawing on one institutional logic while a CEO of a client company might lean the other way.

Although the dataset includes representatives of various groups of actors involved with the STPs, there are some stakeholders that are not represented. For example, heads of universities and local development agencies might have also been included in the study. While the dataset does include views by public officials and people with academic background, this poses a limitation for the study.

The analysis focuses on the metaphors used to describe STPs in the data. Metaphors operate by inviting the listener to draw comparisons between things that are typically considered to belong to different discursive domains or frames of reference (Brown 1978, 77–78; Eco 1986, 87–95). To make sense of a metaphor one has to reflect on both of the domains that are drawn together by this linguistic device. For example, if one is to understand the metaphor ‘surfing the web’ one is forced to contemplate how sitting down and using the internet somehow resembles standing on a board and ‘riding’ the waves in an ocean. To solve the puzzle, one has to draw on culturally embedded knowledge concerning both of these activities and search for the features that they share despite their very obvious differences. Metaphors enliven language because they operate by stating something that is obviously absurd – if interpreted literally – and simultaneously logical and enlightening.

Metaphors are often applied as a mere ornamental device. They are used fleetingly to give some extra flare to a statement. But metaphors can also have a significant *cognitive* or *epistemic value* (Black 1993; Brown 1978, 77–81; Eco 1986, 89). Instead of just replacing one word or expression with another, they bring something additional to the process of sensemaking through the analogies they construct, which open up new ways of seeing the things around us. They invite the listener to engage in interpretive work that can be rewarding, especially when the metaphor constructs novel and puzzling associations. For this reason, metaphors are often used to name new and unfamiliar things or make them comprehensible, by associating them with objects from a frame of reference that is more familiar to people. After a while, these metaphors may turn into so-called dead metaphors (Black 1993), dormant or conventional metaphors (Lakoff 1987) as people lose sight of them even being metaphorical.

However, metaphors that appear especially fruitful may turn into *models* that become persistent tools for making sense of reality (Brown 1978, 113–125). It is these types of metaphors that are at the centre of this study. Metaphors that act as models are crucial for constructing theories of how the world works, and they are used both within our everyday life and in the more discursively disciplined sphere of scientific work. As models, metaphors become widely shared ways of understanding and perceiving phenomena. For example, it is common for both the lay person and the social scientist to

interpret social encounters by evoking theatrical metaphors such as ‘roles’, ‘playing’ and ‘scripts’ that help unpack people’s behaviour and make it understandable.

Metaphors form the focus of our study as they play a significant role in making institutional logics understandable and meaningful for actors (Thornton, Ocasio, and Lounsbury 2012, 45, 54). They help make sense of institutions, identities and rationalities of action by connecting them to more familiar things and ideas. We claim that, due to their polysemic nature, metaphors also make it possible to reconcile and bridge rival institutional logics within organizational fields. Our analysis aims to find out what are the key metaphors used to make sense of STPs and whether they contribute to reconciling the contending romantic and rationalistic logics in the discourse concerning the parks. We consider as key metaphors those that are used regularly by a wide variety of actors to describe STPs, and that offer a specific vocabulary for talking about the parks. These metaphors act as models that make people perceive science parks in a specific light and associate them with certain qualities.

To identify the key metaphors, we combed through our dataset to locate all the metaphors used to describe the parks and the actors and activities within them. As Lakoff and Johnson (1981, 7–11) have noted, there is systematicity in the way metaphors are used and connected with each other through metaphorical concepts. They show how a metaphor such as that of the ‘argument is war’ can lead to a systematic way of conceptualizing and talking about argumentation in the vocabulary of war. Hence, a multitude of expressions (e.g. ‘she used a bold strategy to win the argument’) become understood through the key metaphorical concept that links argumentation and war together.

It is precisely this type of key metaphors that we looked for among the group of metaphorical expressions used to describe STPs in our data. Identifying them requires subtlety from the analytical process as sometimes a speaker may directly invoke a key metaphor (e.g. science park is a *garden* for companies) but other times they may draw on the metaphorical concept indirectly (e.g. we are like *bees*). In the context of science parks, the latter expression only makes sense by evoking the underlying key metaphor of the garden, which connects the STPs with biological processes and makes talk about bees and fertilization seem rational. During the analysis, we collected all the metaphorical statements describing the parks and analysed their interrelations. We looked for common denominators between the metaphors, trying to establish a group of key metaphors that connected several metaphoric expressions together, providing nodal points, which offered the key for making sense of the metaphorical language concerning the parks. In the end, we found six key metaphors that offered a shared reference point for other metaphorical expressions. While, in our case, all of the key metaphors were explicitly used in the data, for a key metaphor to be distinguished, it is not always necessary that it is mentioned within one’s dataset. It is possible to identify a key metaphor even if it is never mentioned in a selected corpus, by drawing out the underlying metaphorical concepts that the audience has to rely on to make sense of the metaphorical expressions found in the data. Even if nobody explicitly mentions the word ‘war’ while describing political debates as ‘exchange of political ammunition’ and ‘shooting down an opponent’, the key metaphor unlocking the metaphors is clear.

Imageries of science parks – the six key metaphors

What is surprising in our dataset is the uniformity of the metaphors and expressions used to define science parks. We distinguished six key metaphors that are used by all the actor groups involved to make sense and characterize the parks. They are not only present in the accounts of STP managers, public decision-makers, and the webpages that aim to market the parks for companies. They are also taken up by the representatives of the companies inhabiting the parks. This means that they are well-known ways of conceiving of the STPs and talking about them, which all the actor groups recognize and are able to draw on, even if their perspectives and positions in relation to the parks differ.

(1) The garden

One of the most prominent metaphors describing STPs in our data is that of an ecosystem of companies living on a limited space of land. STPs are likened to well-taken-care-of natural habitats occupied by plants and animals which interact and feed on each other. The park managers are there to facilitate these interactions or to directly spread ‘fresh’ (another garden-related metaphor use by an STP expert) ideas between the companies. They act as gardeners. Science parks are described as avenues for cross-fertilization between companies, as seen in the extracts below from a debate in the UK parliament:

There is cross-fertilisation here which has led to remarkable results. Something very similar exists in Southern California, around the California Institute of Science and Technology, around the University of Stanford and in other places. (Parliament of the United Kingdom 1967, 974)

Representatives of client companies in Finland and the UK talked about ‘symbiosis’ between companies, as did one of the STP managers in Finland. In a similar fashion, one representative of an STP in Finland likened the efforts of science parks to the workings of bees who move among companies and pollinate them:

Here I was trying to develop companies serving companies, who in a way give birth to ... , who act as bees and fertilize.

In this quote, the STP managers are seen to have a more active role in making the flowers of the science parks blossom. The STPs are not just organizing the garden but are transferring pollen – in this case ideas, best practices and suggestions of shared interests – between them. A CEO of a company operating in a STP in Finland took up the metaphors of ecosystem and symbiosis in the following way:

It's this, I don't know whether it is symbiosis or some ecosystem, or what is the educated term. It is being close to your customers and partners, who we can help and who can help us.

While the person interviewed underlined that he is not an expert in how these concepts should be used and seemed a bit hesitant, his account demonstrated that he, too, was familiar with these terms being used in connection with science parks. There was a clear metaphorical concept at work. One of the STP managers in Finland explained his take on the ecosystem metaphor in the following words:

An ecosystem is kind of like, if you go out there into the forest. There is nobody really in charge, but there are changes happening. Somebody benefits, somebody loses [...].

Here the science park management is depicted as having a very limited role. As a forest or a garden, the STP facilitates the formation of an ecosystem, but there is nobody in charge trying to control the interactions and outcomes. It is also notable that the symbiosis metaphor depicts the companies as profit-seeking actors trying to benefit from each other. The garden is not about an altruistic community led by a romantic value system but about an ecosystem following the laws of nature. It is the ecological system as a whole that opens up certain opportunities for the inhabitants and makes others less viable. From this perspective, the science park does not appear so much like a bee pollinating flowers as it looks like a platform on which flowers, bees and other animals may intermingle, create relationships and compete haphazardly.

These ecological metaphors clearly set the STPs apart from large-scale bureaucratic environments, where rules, official procedures and chains of command would be the guarantee for success following the logic of instrumental rationalism. Instead, the science parks are depicted as places where a lot is left to chance, in a romantic spirit of experimentation and openness to the unexpected. However, the parks, with their high-tech start-ups and their efforts to facilitate cross-fertilization, are expected to provide an exceptionally favourable ground for beneficial *chance happenings* to take place and for new and strong hybrid species to emerge. Hence, the metaphor helps to bridge together rationalistic and romantic logics.

(2) The incubator

Another key metaphor used to describe the parks is that of an incubator. Sometimes a whole STP can be called an incubator, and sometimes the term is used to designate one part of an organization. As a metaphor it draws on three sources, which are all defined by protecting a living organism in its fragile early stages through creating a stable and controlled environment. First, there is a very long history of incubating bird and reptile eggs. The incubator provides optimal and protected conditions for eggs to incubate until they are ready to hatch. Second, incubators have been used for a long time in biological studies for growing and maintaining cell cultures. Third, incubators have been used for several decades in the neonatal care of ill and prematurely born human infants.

The romantic idea of STPs nurturing and caring for young companies can clearly be seen below in the two excerpts from parliamentary debates in the UK:

The Government are aware of the important role that incubators and science parks can play in nurturing new companies, and have supported the setting up of UK Business Incubation as a centre to promote best practice among those nurturing young companies. (Parliament of the United Kingdom 2000, 285)

At the Heriot-Watt Park there are designs for a 10,000 square foot multi-occupancy building which will make it possible for a high technology industry to overcome its early teething troubles. It is a nursery for emergent industries which can then move out to New Towns such as Livingston and Glenrothes, where the contacts made during the development stage can be continued and matured during the succeeding stages of growth. (Parliament of the United Kingdom 1971, 1065)

In both quotes, the speakers talk explicitly about the nurture given in STPs for 'young' companies or for emergent industries. In the latter quote, the speaker also uses the metaphor 'teething troubles', which likens the early stages of companies to the uncomfortable period in children's lives when their teeth start to erupt through their gums. These metaphors present new companies as fragile things that require extra care from outside sources. The STPs are depicted as nurturing actors that are not just after financial gain. Where the garden metaphors often create an image of science parks as an environment for interaction between companies, the metaphors of incubation and nurture present STPs as active agents attending to the needs of companies. These themes are also visible in the interviews, where representatives of client companies and STP managers from both countries talk about STPs 'mentoring' and 'coaching' the companies, and a Finnish STP manager talks about 'keeping them under their wings', instead of aiming to simply benefit from the clients. Mentoring services are also something that the STPs advertise on their websites.

The other side of the coin for these incubator metaphors is that after the nurturing period the companies are thought to 'outgrow' the park and expected to leave their nest, as can be seen in the following quote from a parliamentary debate in the UK:

I am sure that he also recognises that, when companies that have been nurtured in science parks outgrow the parks, they find it difficult to locate on suitable sites nearby and very often must relocate, causing local job losses. (Parliament of the United Kingdom 1999, 1084)

Sometimes talk about growing too big for the park can simply mean needing more office space than is available on the park. However, there is also a clear conception of growing too big for the concept of a science park, as can be seen in the quote from an interview with a CEO of a company located in a science park in the UK:

We are too big for this piece [...], this piece of the research park really was for smaller start-up companies. And now we've been here of course we've now been here for 14 years so, 13 years maybe, so it's maybe not too surprising that now we have outgrown this piece. In the other half of the research park there are classic office building-size buildings, which would certainly be big enough for what we do. So there's still scope to move to the other part of the research park, so we haven't completely grown out of the concept.

According to the interviewee, one can have several types and sizes of companies within science parks. There are smaller spaces for start-ups but even when the firms grow they may change offices and continue in the park. Nonetheless, at some point a company may become too big for

the concept and it is time to move on. In the interviews, many held the conception that there should not be efforts to expand the office spaces in the STPs to accommodate bigger and bigger companies. It should be accepted that at some point the successful companies simply grow out of the concept. They should leave the nest and try their own wings. The incubator metaphor caters to romantic logic in the sense that the park is presented like a caring parent giving warmth and nurture for their child. Then again, the incubation metaphor also fits well with rationalistic logic, as incubation can be seen as a very technical and calculated process that can also be practiced with the aim of making a financial profit off of the little ones, as one does when incubating chicken eggs in the farm industry.

(3) The accelerator

The accelerator is another well-established metaphor that is used to define whole STPs or smaller departments within the parks. In many cases, this metaphor seems to be almost interchangeable with the metaphor of an incubator. However, it lacks the romantic connotations of nurture and care that are attached to the idea of a science park protecting fragile new enterprises. Instead, the metaphor is derived from nuclear physics, in which an accelerator propels charged particles, such as protons or electrons, at high speeds, close to the speed of light. Accordingly, this metaphor conveys the image of increasing the speed of development and creation of networks for start-up companies. Consider the following excerpt from a self-presentation found on the webpage of the Maritime Accelerator located in Turku Science Park:

Maritime Accelerator generates new business and speeds up maritime industry development. [...] We bring together fast-moving growth companies and maritime corporations & accelerate cross-company collaboration. (Maritime Accelerator 2019)

The same idea can also be seen in this quote from an interview with a representative of a company located in a science park in the UK:

There's, there are, I think it's probably three or four key connections in the university, which, I would have made anyway because, I've got the connections but they've been enhanced or accelerated, by being here. [...] So you can be part of a group of other businesses that all sit in a serviced office block, but actually a science park is doing more than that. It's elevating, it's creating, it's innovating, it's, and it's spinning out new businesses all the time.

The metaphor seems to fit well with instrumental rationalistic logic. Instead of being a protective environment for companies with teething problems, the accelerator is an environment of high speed and exciting things happening. The STPs are presented as having an active role in relation to the companies. The parks are putting their foot on the gas, forcing new people to pump into each other, and accelerating the pace of progress for the companies. They are making things happen faster, and thanks to them new businesses are succeeding at a faster pace. They act like a catalyst that speeds up a reaction between different substances that have been brought into contact with each other, as one STP expert noted:

Interviewer: So, you are kind of like a catalyst ...

Interviewee: Well, at least ...

Interviewer: ... between the academic world and the industry?

Interviewee: Yes, and a catalyst is something that has an essential role in the reaction but is not visible in the end product. A catalyst is precisely what we are. That is exactly right.

Although the metaphor of catalyst is introduced by the interviewer, who is leading the interviewee, the participant enthusiastically takes up the metaphor and confirms that it is well-suited for depicting their role. They speed up the reaction, without determining the outcome or being a part of the end result. Another STP expert talked about 'facilitating collisions between different elements' within the park as if talking about experiments in a particle accelerator. One of the Finnish STP managers mentioned the importance of 'unexpected collisions' in the parks, which give rise to new business

relationships. There always seems to be an element of surprise and the unexpected involved in these imageries.

Whereas the incubator metaphor paints a picture of safe space for delicate young companies, the metaphor of the accelerator gives the parks an air of excitement and risk. They are presented as platforms for success, but the success is predicated on things happening fast and on people bravely experimenting, colliding into each other and innovating. They are no place for either timid entrepreneurs or for rigid plans and bureaucratic order. These ideals of chance, excitement and brave experimentation connect the metaphor to romantic logic and work to reconcile the conflicting logics together.

(4) The village

One of the most persistent metaphors concerning the parks – especially in the interviews – is the village. The parks are constantly depicted as places where informal interactions take place and there is comradeship among the residents. The STPs may be parks, but in this case they are not parks built for nurturing plants and animals. They are recreational parks built for socializing. In the accounts of the interviewees, STPs are characterized by an expectation of people enjoying the company of others while engaging in relaxing and inspiring activities. Some of the science parks also evoke these images in their marketing, as we can see from the following quote from the Cambridge Science Park (2019) webpage:

Work outdoors, relax at lunchtime, enjoy after-work events. The Park's 152-acres includes a central protected zone of lakes, natural habitat, mature trees, shrubs and grassed areas. To make better use of the Park's natural assets, we are developing plans for 'Central Park', to include a social hub, with amphitheatre and lakeside stage, tranquility zones, fitness facilities, an orchard and eating spaces.

The village metaphor is strongly connected to the ideals of hedonism and playfulness at the heart of romantic logic. In our interviews with STP managers and representatives of client companies in the UK there is talk about how people 'mix and mingle' and there might be 'outdoor concerts and theatre' or people enjoying coffee or drinks together. Some of our interviewees were also eager to show us the recreational facilities they had arranged for their employees in the park.

Yet, unlike a public park, the group of people inhabiting an STP is quite limited and stable. They are assumed to know each other, which differentiates STPs from public parks. It is thus understandable to talk about them as villages, as seen in the following quote by one STP manager in the UK:

[...] you're trying to create the equivalent of a village mentality, where everybody knows everybody. Companies in the past would have moved in and frankly it wouldn't matter to them who was next door. Now what we're trying to look at is, given the over hundred companies that we've got on the park, who would we like to invite to be part of our community, where they both gain from and contribute to the overall success of the park rather than just driving their own bottom line which of course is what they need to do.

In the quote above one can see the STP defined through a 'village mentality', which is tied to the idea of comradeship. The success of the park is presented as a common effort. However, this village is not just about symbiotic ecological relationships where everyone makes profit by trying to gain from the presence of others. Neither is it a situation where the STP managers are trying to make a buck by having as many residents as possible. The metaphor of the village draws on the ideals of community, closeness and familiarity. However, the speaker is quick to note that they realize the financial interests involved, positioning themselves as someone who fosters the village mentality but is not naïve and has a solid grasp of the realities of doing business. Hence, they shift between rationalistic and romantic vocabularies and ideals in the effort to manage how they are perceived by the interviewer.

In the interviews both the STP managers and the representatives of companies talk about 'community spirit' and 'sense of community'. A representative of a company in the UK talked about the companies in the park being 'on the same boat' while a CEO of a Finnish company viewed them as 'being under the same umbrella'. Often a strong image of togetherness and inclusion is associated

with the parks. The STP managers and CEOs also mention how companies are expected to 'look after one another' and 'help each other'. In turn, negative attributes are associated by both groups of actors with behaviour like 'hiding' in one's own office in 'isolation', which is considered typical of offices outside the science parks. This type of imagery is invoked even in accounts that either criticize the STPs for not being able to execute these promises or that take a cynical stance against the more romantic rationale behind building this type of community spirit. Even these accounts acknowledge village mentality as something central to the workings of the parks. The village metaphor entwines the parks with images of informality, authenticity and pleasantness that are supposed to make these communities flourish – instead of relying on formal procedures and extensive organization as the route to success. The parks are presented simultaneously as sites of closeness and caring, and as targets of community building by the parks' managers, who are trying to generate feelings of spontaneous and authentic community by using extremely calculated methods. It is this cold calculation behind building the community spirit that makes the village metaphor resonate also with instrumental rationalistic logic and makes it seem like a legitimate endeavour from that perspective.

(5) The conduit

While some metaphors depict STPs as actors, they can also be talked about in structural terms. This is the case with the metaphor of conduit that presents the parks as bridges that link actors, but do not interfere so much with these interactions. They connect the companies on the parks together, they connect the companies to the surrounding universities, and they link the companies to the surrounding economy. We can see a good example of this metaphor in use in the following excerpt from an interview with a representative of a client company in the UK:

I think our job for the university is to, we call ourselves conduits of knowledge transfer from the university into the real world, in the health decision-making world. And that's exactly what our role is [...] we're transferring university knowledge into the pharmaceutical world, into the real pharmaceutical world. So, a science park is, that's exactly what science parks are kind of for, for that interaction between companies and universities. So, it fits us very nicely actually in that way, and I think that is kind of more widely known and widely advertised.

The image of science parks bridging the gap between different actors is especially prevalent in the parliamentary debates we analysed, as can be seen in the following quote from a parliamentary debate in the UK:

In this context, will the Government also give more thought to the use and promotion of science parks? By having industries close to universities, this can help to bridge the gap between research and development and the market place, which is necessary if we are to achieve profits from new industries. (Parliament of the United Kingdom 1982, 38)

The parks are often portrayed as the missing 'link' between the academic world, industry and the market place both in the interviews and the parliamentary debates. They are expected to bring together the academically-oriented inventor and the pragmatic entrepreneur to set up an exchange that leads to unexpected innovations. The parks are illustrated as a channel through which knowledge and ideas travel from one domain to another. The MPs and our interviewees often characterize the parks as 'transfer units' and talk about science parks enabling 'knowledge transfer', 'know-how transfer' and 'technology transfer'. The parks are expected to facilitate the movement of technology and knowledge among otherwise separate organizations and individuals. Sometimes this is referred to as knowledge spillover, as one CEO of a Finnish client company put it:

[...] in places like these you have unexpected encounters between experts from different fields. Internationally they talk about the knowledge spillover phenomena.

The metaphor of spillover invokes the image of liquid moving freely in a container and accidentally splashing over the edge of a container on to its surrounding. The idea is that in the parks knowledge may flow over the borders of one company and hit other companies (or people) close to it in a

seemingly uncontrolled yet fortuitous manner. Sometimes, in the statements by the MPs, the knowledge is even said to spill over to the areas surrounding the park and give birth to new high-tech companies in the region. These images make the underlying metaphor of conduit extend from the ideals of rationalistic management into the domain of romantic logic of unpredictability.

The conduit metaphor paints a picture of the parks as almost mere structure, which can nonetheless bring about significant and unforeseen results by drawing connections that would not otherwise materialize. The park, however, does not control what the outcomes will be. The conduit metaphor fits well with rationalistic logic as it makes the parks seem like well-designed infrastructure that facilitates new productive connections to form. Then again, in a very romantic spirit, the actual processes within the structure are left to chance and there is an expectation of something unforeseen taking place as knowledge splashes around within the structures and sometimes spills over borders. Hence, the metaphor can be made to serve either of the contending logics.

(6) The landlord

The final key metaphor found in our data was that of the landlord, which depicts the parks as actors following their own interests. This metaphor differs from the others as it is the only one that is used to characterize the parks solely in pragmatic and rationalistic terms. It is used to contrast the romantic ideal of the parks as stimulating and supporting communities with the everyday life that the park managers and client companies deal with. Typically, the metaphor is used to depict STPs as actors who are in it simply for financial gain. They offer office space and infrastructure for the companies in exchange for money and that is it, as we can see in the following statement by the CEO of a client company in the UK:

They are our landlords [...] they still provide us with the electricity and the gas, we pay them for it but nevertheless, they are still our landlords.

A similar point is made by another CEO of a client company in the UK:

And they think, they like to think that there is a bit of community and all that kind of stuff. And therefore, we find them to be a very good landlord. It works the other way around. So, we think that there is merit in being on [the park], we think it adds something to my business card [...] but ultimately it's just my landlord. We don't actually do that much for each other, except we make them look good, they make us look good, and therefore everybody's happy.

While statements evoking the landlord metaphor may be interpreted as cynical in relation to the values of romantic logics, they are not critical of the parks. Either the parks may be praised as great landlords or their pursuit of profit is considered completely acceptable by the client companies. On the one hand, the idea of a cold and calculated landlord breaks the romantic image of entrepreneurs coming together in a relaxed atmosphere to share ideas. Inserting a profit-seeking mentality into the picture spoils expectations of comradeship, nurture and shared innovative spirit that are central for romantic logics. On the other hand, the CEOs often seem quite happy to depart from these romantic ideals and present their relationship with the park as a simple business transaction. The reason for the switch over to rationalistic vocabulary might be that this cynical or pragmatic image also presents the CEOs as calculating business people trying to gain from the exchange. While the CEOs recognize that romantic logics have a place in science parks and often evoke them in their statements, they do not usually commit themselves completely to this type of talk. Rather, they switch between romantic and rational logics during the interviews in a strategic way to shape the way they are perceived by the audience.

Concluding discussion

All the actor groups involved in the parks use similar vocabulary in their statements when describing the purpose of the parks and the main activities within them. The conflicting logics are not tied to

any specific position in relation to the parks. There does not seem to be group of romantics waging war with the rationalistic faction within the parks. Romantic and rationalistic language is used by representatives of the client companies, national decision makers and representatives of the parks. The logics and the ways of talking are apparently so well-known that all of the groups are able to draw on them as a resource when talking about the parks. It seems that all of the groups are also able to use both of them to their advantage. However, while giving their account, the speakers tend to shift back and forth between values and rationalities that draw from romantic and instrumental rationalistic logics of action.

Despite appearing contradictory, both logics seem to be central for the actors' understanding of what the parks are about and how they should operate. The parks are about doing away with the heavy bureaucracy, standards and conveyor belts associated with the old Fordist paradigm of mass production. They are supposed to be relaxed environments where entrepreneurs can come up with novel ideas while enjoying their surroundings. Companies within the parks are expected to succeed precisely due to the lack of bureaucracy, hierarchies and strict rules that are the hallmarks of formal organization. Yet, the parks are not presented as chaotic environments. Both the parks and their client companies are expected to be managed by experts who take their job seriously. The clients are typically high-tech companies trying to gain an edge on the world market in a very calculated manner. Similarly, the parks are marketed by highlighting the state-of-the-art technical solutions, modern office space and well-coordinated infrastructure they offer to the clients.

Our data shows that many of the actors involved are a bit uneasy with these conflicting ideals and rationalities. They do not always present themselves as assigning whole-heartedly to the image of the parks as villages of entrepreneurs mingling together in comradeship. They may not want to make themselves look like daydreaming romantics instead of cool-headed businesspeople. But neither do they want to present themselves as just regular office workers in another grey office building. There are upsides to associating oneself with the magic that is associated with the parks. For example, the CEOs of the client companies usually shifted from rationalistic to romantic accounts during the interviews. They would first emphasize the mundane technical benefits offered by the park as the reason for locating there. However, as we posed further questions about the advantages of being in the park, they would eventually switch to more romantic vocabulary. They started to talk about the relaxed atmosphere, good buzz and closeness offered by the parks. In most cases, they evoked both the 'calculated businessman' and the 'bohemian inventor' identities during the interviews. They seemed able to switch back and forth between the vocabularies of the conflicting logics but the tension between the logics was clear. While the park managers and STP experts also shifted between these logics, they seemed less awkward in evoking romantic ideals. They typically highlighted their understanding of the parks also as cold and calculated businesses but appeared to be equally at home with the romantic imageries.

The difference between rationalism and romanticism as institutional logics lies in the values, identities and rationalities they prescribe. The difference is not necessarily about choosing between capitalism and something else. Neither logic inherently opposes making profit (cf. Campbell 1987, 208–209). They differ in views concerning the relationship between work and pleasure and the role of formalism, bureaucracy and predictability in organizing business – that is, the way the money is made. From the viewpoint of romantic logic, it is not acceptable to sacrifice individual creativity, passion and sense of community on the altar of efficient and predictable production. Surprises and unexpected connections, individual enthusiasm and initiative, and informal surroundings are what make the work meaningful and worthwhile. They are also considered the key ingredients of successful companies. In our data, the conflict between the logics is managed by evoking metaphors that help to bond them together. The six key metaphors found in our study help to reconcile rationalistic and romantic ideals in a way that makes the parks seem both free and exiting while also appearing legitimate from the viewpoint of calculating capitalistic enterprise. They bridge the contending logics and facilitate their co-existence without a need for a battle of dominance over the logics in the organizational field.

Key metaphorical concepts such as the garden, the accelerator and the conduit present the parks as environments of chance happenings, energy and surprising connections that can lead to novel innovations and success. Metaphors like the village and the incubator invoke imageries of informal community and care in the context of competing high-tech enterprises. The parks are presented as giving birth to new things, nurturing young companies and facilitating novel social connections. The key metaphors make the parks appear as standardized models for unpredictability. They are calculated and standardized spaces for generating non-standardized experiences. The parks are expected to be actively managed, but instead of trying to render processes as predictable as possible and to control the outcomes, the management is supposed to facilitate and foster the unexpected. As some of the key metaphors indicate, the manager's job is to pollinate, nurture and accelerate, not to set rules and standards. These imageries of organized disorganization and calculated efforts to give birth to the unanticipated offer ways to bridge the logic of instrumental rationality with that of romanticism.

The only key metaphor that seems to clearly emphasize one logic over the other is that of the landlord. Here the romantic values get mostly effaced. Hence, the landlord metaphor by itself does not serve the purpose of reconciling conflicting logics, as the other metaphors do. It is used to emphasize rational values, in opposition to the romantic ideals often attached to the parks. Nonetheless, the actors evoking the landlord metaphor may still switch over to the romantic vocabulary within a single account. To some extent, the metaphor seems like a safeguard against appearing too romantic in one's self-presentation. In this sense, also this metaphor is part of the toolbox for navigating between the conflicting logics. The fact that actors are able to shift this way between different logics and vocabularies of practice even within a single interview gives further empirical support to the argument that actors do not blindly follow one set of institutional scripts. Even if their identities and sensemaking are institutionally embedded, they have a degree of autonomy. Actors can take up contradictory identifications and use elements of various logics like bricoleurs digging into their cultural toolboxes (Binder 2007; McPherson and Sauder 2013; Smets et al. 2015; Thornton, Ocasio, and Lounsbury 2012, 80). Polysemous semiotic devices, such as metaphors, can be crucial in reconciling conflicting logics and identities that people face.

Due to their polysemous nature, metaphors help reconcile conflicting logics similarly to the polysemous targets studied by Wikberg (2020). Yet, there is a major difference. Unlike the targets, which work because an actor can focus on only one of the manifold meanings attached to a word, metaphors operate by evoking several potential interpretations and associations at the same time. It is this metaphoric play that differentiates them from simple comparisons, which blatantly point out similarities between objects belonging to different domains. With metaphors the meaning is always nebulous. Metaphors offer a multitude of information in a condensed form that requires plenty of inference work by the reader. This makes them similar to visual texts and images, whose role in bridging contending institutional logics has been studied by Höllerer et al. (2013). Images and metaphors create an excess of meaning and are open for divergent interpretations. And if a picture is worth a thousand words, no amount of paraphrasing is able to completely exhaust the meaning potential of a metaphor (Riad 2011; Ricœur 1973; Waistell 2007). Metaphors and images are related because metaphors often work through visual cues, by drawing attention to similarities in form and appearance. For example, interpreting the metaphor 'sheep in the sky' relies on knowledge concerning visual similarities between clouds and sheep. This is why metaphors are often conceptualized in visual terms, for example, as figures of speech. But of course, not all metaphors work in this manner. When the word sheep is used as a metaphor for herd mentality and cowardice, visual clues become non-essential for interpreting the metaphor.

Our study is limited by the fact that it analyses the role of key metaphors in a single organizational field. However, while STPs form a specific type of organization, the way metaphors help to reconcile conflicting logics is not tied to any particular organizational type or field. Our argument concerns metaphors and how their polysemic nature helps to deal with conflicting logics in general. There is no reason to believe that metaphors would not be able to serve a similar function in other

organizational fields. Of course, the content of the conflicting logics varies from case to case, as do the metaphors used. Yet, the way the polysemic nature of metaphors helps in reconciling conflicting logics remains the same.

We see a lot of potential in future studies focusing on metaphors and other semiotic devices that are used in managing conflicting institutional logics in different organizational fields. It would also be interesting to see future studies digging deeper into the differences and similarities between polysemous semiotic devices and how they may be used together in efforts to shape people's understandings of the values and rationalities that should guide the actions of organizations and their members. Empirical studies looking at the role of key metaphors in shaping, defining and understanding institutional logics would also be a valuable contribution to the field.

Concerning STPs, future studies could broaden the empirical scope of research. Our study is limited in terms of the stakeholders whose views were present in the data. A study that would include even a wider group of stakeholders and conduct a systematic quantitative comparison of the ways of talking about the parks might offer very interesting new findings. It would also be interesting to see a historically oriented study that would examine whether these ways of making sense of the parks have changed over years and what has led to the surprising similarity of describing them across various groups of stakeholders.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work was supported by the Academy of Finland [grant number 319183].

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