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Collaboration and identity formation in strategic interorganizational partnerships: An exploration of swift identity processes

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ABSTRACT

We investigate how collective identity formation processes interplay with collaboration practices in an inter-organizational partnership promoting regional innovation. We found that initial collaboration challenges are dealt with by setting up an early 'swift identity' which is associated with material artifacts to increase its strength and stability ('swift identity reification'). However, as the partnership evolves, the reified identity becomes misaligned with partners' underdeveloped collaboration practices. To ensure realignment, new attempts at reification are performed, as partners buy time for learning how to collaborate. Our findings contribute to extant identity research by proposing alternative (i.e., 'swift' and 'reified') mechanisms of identity formation in contexts characterized by both heterogeneity challenges and integration imperatives. They also integrate the debate about the role of identity formation in the evolution of interorganizational partnerships. For both literatures we highlight the important role of materiality.

Keywords: collective identity, identity formation, interorganizational collaboration, strategic partnership, materiality.

Introduction

Over the last few decades, we have witnessed an increasing involvement of organizations in a variety of collaborative arrangements (Bryson et al., 2006; Raab and Kenis, 2009; Osborn and Baughn, 1990). Strategic interorganizational partnerships, such as alliances, consortia and cross-sector partnerships, represent collaborations between distinct and autonomous organizations instrumental in obtaining benefits such as optimizing resources, sharing risks, creating new sources of competitive advantage and facing complex issues, especially in situations that single organizations cannot tackle on their own (see Barringer and Harrison, 2000; Marjchrzak, et al., 2015; Selsky and Parker, 2005). Unfortunately, the conviction that such collaborations can produce positive outcomes for their members and for the society at large is coupled with evidence that their potential is often not realized (Bryson et al., 2006; Park and Ungson, 2001). Process studies on Interorganizational Relations (IOR) have repeatedly emphasized that strategic interorganizational partnerships are often subject to tensions, conflicts, open crises or even manifest failure. These difficulties are caused by the heterogeneity of backgrounds, goals and interests that animate participants, on the one hand, and the need to pursue integrated goals despite differences, on the other (Austin and Seitanidi, 2012; Bryson et al., 2006; Cloutier and Langley, 201; Denis et al., 2011; Ring and Van de Ven, 1994).

According to Marjchrzak and colleagues (2015), a better understanding of the dynamics by which strategic interorganizational partnerships function over time is pivotal to anticipating the likelihood that they will either thrive or underperform. Specifically, partnership performance is often explained as a function of the extent to which partners follow an 'integration imperative', i.e., consider themselves part of the same collective over time and act in the name of a common goal, instead of carrying forward interorganizational differences and heterogeneous interests (see

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also Gray, 1989; Huxham, 1996; Le Ber and Branzei, 2010; Ring and Van de Ven, 1994; Selsky

and Parker, 2005; Vlaar, et al., 2007). The integration imperative has led IOR scholars to suggest

that interorganizational identity may play a role in orienting the trajectory of strategic

partnerships, from the definition of strategic objectives to organizing day-to-day collaboration

(Beech and Huxham, 2003; Hardy et al., 2005; Huemer, 2004; Ellis and Ybema, 2010).

Interorganizational identity still occupies an ambiguous place both in the identity literature

and in the literature on interorganizational relations. Concerning the first, studies have

investigated identity formation either in organizations (organizational identity) or in aggregates

where membership is category-based, such as social movements, markets, or industries

(collective identities). However, it is not clear whether interorganizational identity formation

should be considered a subspecies of one of these processes or theorized from a new perspective.

Like organizational identity, interorganizational identity requires convergence of a set of mutual

(though not necessarily shared) understandings about the central, enduring, and distinctive

characteristics of the group (Peteraf and Shanley, 1997). However, as in collective identities,

such characteristics are created and sustained by members in fluid and heterogeneous ways as

they navigate needs for sameness and differentiation (Navis and Glynn, 2010; Patvardhan et al.,

2015). For these reasons, recent studies have suggested that interorganizational identity should

be treated as a *sui generis* process (Beech and Huxham, 2003; Ellis and Ybema, 2010) but have

not specified how such process informs the literature on identity formation at large.

Concerning the IOR literature, while most studies on collaboration dynamics acknowledge

that developing mutual understandings or a shared sense of collective membership can play an

important role in how collaboration evolves in strategic partnerships (Gray, 1989; Huxham,

1996; Kumar and Nti, 1998; Ring and Van de Ven, 1994), they rarely focus on the construct of

interorganizational identity, and even less often on how interorganizational identity evolves as

the collaboration itself progresses (Huemer, 2004; Peteraf and Shanley, 1997). It is also

noteworthy that the few studies that have directly or indirectly referred to identity formation in

IORs do not agree on its role in interorganizational collaboration. Three contrasting positions

have emerged: small wins, dysfunctional rigidity, and heterogeneity-driven instability.

According to the 'small wins' approach, by engaging in initiatives that require progressively

higher levels of risk, higher relational trust emerges, followed by a sense of collective

belongingness. These developments serve as essential tools in progressively addressing

partnership heterogeneity and reaching successful collaboration based on integration (Bryson et

al., 2006; Doz et al., 2000; Beck and Plowman, 2013; Vangen and Huxham, 2003; Ring and Van

de Ven, 1994). Other studies on IORs, however, show that while some degree of integration

(e.g., the definition of common goals) may facilitate collaboration, too much integration (e.g., the

development of a strong interorganizational identity) may bring along dysfunctional rigidity

inside IORs, for instance, pushing partners to focus excessively on positive outcomes and ignore

negative outcomes (Huemer, 2004; Huxham and Vangen, 2013; Marion et al., 2015; Thorgren

and Wincent, 2011; Zhang and Huxham, 2009). Last, an emergent stream of literature on identity

dynamics in IORs (Beech and Huxham, 2003; Fiol and O'Connor, 2002; Hardy et al., 2005; Ellis

and Ybema, 2010; Koschmann, 2013) has started to theorize identity in IORs as a unique 'mêlée'

– i.e., a highly heterogeneous construction, in which partners manifest continuous instability

regarding their needs for belonging and differentiation, and suggest that how such a mêlée

influences collaboration dynamics in IORs is difficult, if not impossible, to predict (Beech and

Huxham, 2003; Sammarra and Biggiero, 2001; Ellis and Ybema, 2010; Ybema et al., 2012).

Taken together, the insufficient evidence in the identity formation literature and the contradictory evidence in the IOR literature call for a deeper understanding of the processes by which identities form in IORs, and of how identity formation shapes IOR collaboration outcomes, whether through affording (i.e., win-win), constraining (i.e., dysfunctional), unpredictable (i.e., instable) loops or any other mechanisms that have not yet been explored.

To answer these research questions, we conducted an exploratory longitudinal study of an interorganizational partnership among several public and private organizations in a highly industrialized European region. The strategic goal of the partnership was to create a platform for collaborative regional innovation. We show that the first uneasy attempts through which highly heterogeneous partners give life to a strategic collaboration plan are facilitated by the early formation of a 'swift identity' that functions as partnership aggregator and promotor. To further stabilize the swift identity and thus allow the partnership collaboration practices to grow, partners associate the attributes of the swift identity to material artifacts, enacting an identity reification process. Later in the life of the partnership, we document an emergent misalignment between the already consolidated (i.e., reified) identity and a still fragile collaboration, as well as several attempts at realignment through materiality (i.e., decoupling identity from pre-existing material artifacts and recoupling it with new ones).

By defining the new process of swift collective identity formation and the associated processes of reification and anticipated alignment, we contribute to the interorganizational relations literature by disentangling the debate about the role of identity formation in the evolution of strategic interorganizational partnerships (i.e., affording, constraining or unpredictable). We contribute also to the identity formation literature by proposing alternative

mechanisms of collective identity formation (i.e., 'swift' and 'reified') in contexts characterized

by both heterogeneity challenges and integration imperatives.

Theoretical Background

Collective identity formation in interorganizational collaborations

Collective identity formation is commonly defined as the process by which a set of actors come

to define themselves as a collective instead of a set of disconnected entities. The term refers

either to single organizations (organizational identities) or to category-based aggregates, such as

industries, markets, social movements and institutional fields (i.e., collective identities) (Gioia et

al., 2013; Patvardhan et al., 2015). Some studies have argued that interorganizational identity

shares many properties with organizational and collective identities but also presents distinctive

characteristics (Beech and Huxham, 2003; Ellis and Ybema, 2010; Hardy et al., 2005; Peteraf

and Shanley, 1997). Paralleling the classic definition of organizational identity provided by

Albert and Whetten (1985), Peteraf and Shanley give one of the first explicit definitions of

interorganizational identity as "a set of mutual understandings (…) regarding the central,

enduring, and distinctive characteristics of a group" (1997:166). However, the authors specify

that interorganizational identity differs significantly from organizational identity in at least two

ways. First, in contrast to organizational identity, it entails a more heterogeneous set of mutual

understandings among members (i.e., less shared and integrated) such that they are not required

to perceive the group in exactly the same way, nor to mirror each other's understanding of

distinguishable attributes. Second, it requires a common understanding among members that a

cognitive group of some sort exists. This understanding is almost automatic for organizational

identity but less so for members of distinct and autonomous organizations that often enter IORs

for opportunistic reasons and enact contested and dynamic claims for sameness and differentiation (Beech and Huxham, 2003; Hardy et al., 2005; Patvardhan et al., 2015).

Collective identities refer to aggregative forces that lead participants in the same institutional field, community, industry, profession or social movement to recognize themselves as members of the same broad legitimating category and to experience a shared fate, emotional connection or perception of similarity (Navis and Glynn, 2010; Wry et al., 2011; Patvardhan et al., 2015). Literature has shown that the environments of IORs are similar to the broader fields of social movements, markets and industries in terms of heterogeneous goals, uncertain relations, and dynamic evolution. However, IOR members need to work towards common and interdependent goals that require a stronger integration imperative – i.e., they need to solve inter-group tensions triggered by heterogeneous goals and integrate identity dialectics (Beech and Huxham, 2003; Ellis and Ybema, 2010; Sammarra and Biggiero, 2001; Ybema et al., 2012). As a consequence, while displaying a multiform membership and a sense of 'shared fate' is often sufficient to sustain collective identity even for long periods of time (Navis and Glynn, 2010; Polletta and Jasper, 2001; Zhang and Huxham, 2009), sustaining interorganizational identity requires more proactive and effortful attempts at integration.

Based on these elements, we suggest that the main characteristic that sets interorganizational identity apart from both organizational and collective identities is a unique mix of high heterogeneity concerning understandings about a group's core attributes, on the one hand, and the constant need to negotiate and converge on mutual (but not necessarily shared) understandings, on the other hand. So far, only a limited number of identity studies have dealt with identity processes at the interorganizational level, and even fewer studies have tackled the processes by which an identity forms amidst heterogeneity challenges and integration

imperatives. According to some recent studies, interorganizational identity results from the

bricolage, i.e., process of combination of superordinate collective identities, such as market or

industry categories that already benefit from institutional legitimation and stability (i.e., who we

are as a region, industry, community) and the single organizational identities of the participants.

For instance, the combination of national and organizational identities is documented in the

studies of identities of Dutch and Canadian breweries (Lamertz et al. 2005; Kroezen and

Heugens, 2012), of the Franciacorta wine district in Italy (Zamparini and Lurati, 2017), of

industrial supply chains (Ellis and Ybema, 2010) and of cross-sector partnerships for health

promotion (Beech and Huxham, 2003). However, *how* the bricolage of the new identities occurs

remains underexplored (Gioia et al., 2013; Patvardhan et al., 2015). Furthermore, identity studies

have paid little attention to how identity formation and collaboration practices interplay. To

further explore the issue, we now turn to more in-depth investigations from the IOR literature.

Processes of interorganizational identity formation

Even if few studies have explicitly referred to the concept of interorganizational identity, much

of the IOR literature assumes the existence of an interplay between partners' identity as a group

and their ability to engage in successful collaboration, such that three positions can be outlined:

the small wins perspective, the dysfunctional rigidity perspective, and the instability perspective.

According to the first perspective, the formation of identity at the interorganizational level is

a gradual process that follows the pace of collaboration practices. For instance, the studies of

Ring and Van de Ven (1994), Vangen and Huxham (2003) and Bryson and colleagues (2006)

have argued that collaboration and relational processes co-evolve in IORs following a 'small

wins' approach: a trial and error process through which partners motivated by merely

opportunistic considerations start collaborating through low-risk initiatives and, if successful,

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engage in initiatives with progressively higher levels of risk that usually require higher degrees of integration at the partnership level. This progressive mechanism is said to lead to the creation of inter-organizational trust, which in turn generates partners' higher commitment to the partnership (see also Doz et al., 2000; Ness and Haugland, 2005). Where commitments are executed efficiently and equitably, partners may develop a group identity that encourages the creation of shared norms, assumptions, procedures, and agendas which further facilitate collaboration practices (Beck and Plowman, 2013; Bryson et al., 2006; Vlaar et al., 2007) and push partnerships towards more crystalized and stable forms (Huxham, 1996; Maguire et al., 2001). Such a process, however, can take a great deal of time to develop (Schilke and Cook, 2013; Vangen and Huxham, 2003), and if a group is subject to unexpected changes, the process becomes even more problematic (Huxham and Vangen, 2000). The following description provided by Ring and Van de Ven (1994) effectively exemplifies the small-wins perspective:

> In practice, most cooperative interorganizational relationships among strangers emerge incrementally and begin with small, informal deals that initially require little reliance on trust because they involve little risk (Friedman, 1991; Van de Ven, 1976). As these transactions are repeated through time, and meet basic norms of equity and efficiency, the parties may feel increasingly secure in committing more of their available resources and expectations in subsequent cycles of a cooperative IOR. (…) Greater reliance on trust in the goodwill of other parties also decreases transaction costs and increases managerial flexibility because the parties will perceive a lower need for a legal document (Friedman, 1991). Thus, establishing a congruent understanding of each other's identity in relation to others is a necessary (not sufficient) condition for negotiating parties to commit and enter into a cooperative IOR. (Ring and Van de Ven, 1994:101)

By contrast, the dysfunctional rigidity perspective suggests that developing trust can at times be beneficial for a partnership because it reduces transaction costs and increases collaboration flexibility, reciprocity, and overall resource commitments. However, taking the next step towards a collective identity can introduce dysfunctional mechanisms in the partnership, such as

collaboration rigidity (Huemer, 2004; Huxham and Vangen, 2013) or blind faith in the

partnership (Gargiulo and Ertug, 2006; Marion et al., 2015; Thorgren and Wincent, 2011).

Specifically, the increasing sense of cognitive and emotional closeness afforded by an

interorganizational identity leads individuals to develop heuristics, i.e., simplifying mechanisms

that allow them to navigate more easily the partnership and overcome the obstacles constituted

by partners' heterogeneous goals and backgrounds (Ungureanu et al., 2018). Unfortunately, such

shortcuts can lead partners to turn a blind eye on negative performances or threatening behaviors

from other partners (Sloan and Oliver, 2013; Ungureanu et al., 2018). Such processes are said to

occur because of the partners' need to preserve and strengthen their identities once formed (Fiol

and O'Connor, 2002). A risk exists, therefore, that a sense of collective membership will

introduce rigidity and block IORs' constant adjustments to internal and external conditions

(Gargiulo and Ertug, 2006; Thorgren and Wincent 2011; Vlaar et al., 2007).

   In addition to these contrasting positions, more recent studies have suggested that

interorganizational identity follows non-linear patterns that make the trajectory of the partnership

difficult, if not impossible, to predict. According to the studies by Koschmann (2013), Beech

and Huxham (2003) and Ellis and Ybema (2010), participants in IORs constantly oscillate

between maintaining their uniqueness as organizations and establishing similarities to the other

organizations in order to get the collaboration going (Ellis and Ybema, 2010; Sammarra and

Biggiero, 2001; Ybema et al., 2012). As a consequence, they might encounter problems in

defining what is 'inside' and 'outside' the partnership and experience a high level of

fragmentation and conflict in defining a shared identity, especially in light of the heterogeneous

interests and cognitive frames that constitute the partnership (Ellis and Ybema, 2010; Patvardhan

et al., 2015; Tempest and Starkey, 2004). From this standpoint, Beech and Huxham (2003)

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suggest that interorganizational identity is a 'mêlée' – i.e., a highly heterogeneous construction in which partners oscillate between facilitative activities that are in the 'spirit of collaboration' and manipulative activities such as 'collaborative thuggery'. Since the instability of interorganizational identity is irreducible, participants in IORs must learn to live with it, rather than avoid or overcome it through small win attempts.

Studies acknowledging the instability of interorganizational identity have theorized a more complex interplay of identity formation and collaboration in IORs than the small wins and the dysfunctional rigidities perspectives, taking into greater consideration the specificities of IORs in terms of heterogeneity challenges and integration imperatives. However, it is not clear how the instability perspective relates to the small wins and the dysfunctional rigidities perspectives, nor does it engage with previous literature on identity formation at large.

Advancing the debate on interorganizational identity formation and its role in interorganizational partnerships

In light of scarce evidence and fragmented theorizations, we need further insight into the processes through which interorganizational identity forms and evolves throughout the lifecycle of an IOR. Additionally, we need to explore the interplay between interorganizational identity formation and the IOR's collaboration outcomes. To begin with, the position of interorganizational identity with respect to established streams of identity literature is still unclear. As a further complication, findings about how identity shapes collaboration in IORs have been inconclusive and the role of the universally-acknowledged characteristics of IOR (i.e., heterogeneity challenges and integration imperatives) has remained under-investigated both for identity formation and for the interplay between identity formation and collaboration. For this purpose, advancing findings in identity and IOR literatures can be mutually beneficial.

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As argued by Gioia and colleagues (2010), despite a promising start, identity studies have

often focused on the 'input material' for new identity formation but have overshadowed the

driving forces by which such inputs become a new identity (Gioia et al., 2013; Patvardhan et al.,

2015). Complementarily, IOR studies investigate the driving force of collaboration practices. In

the same way, a clearer theorizing on identity formation dynamics can help the IOR literature

integrate divergent findings about the 'affording,' 'constraining' or 'unpredictable' consequences

of such dynamics on collaboration outcomes. To give an example about how the identity and

IOR literatures may complement each other, Patvardhan, Gioia and Hamilton (2015) present

evidence of a gradual process of identity formation of a community of 'i-colleges' (information

schools) that echoes some of the arguments of the small-wins perspective. As i-colleges interact

and become increasingly aware of their belongingness to a new category, they first draft an ill-

defined collective identity and then gradually use approximations to establish, negotiate and

consolidate the boundaries of the new identity (Gioia et al., 2010). However, the authors also

emphasize that the formation process is multiphase, heterogeneous, contentious, and

continuously precarious (instability perspective) – ultimately leading to an identity crisis during

which partners acknowledge the impossibility of a consensual identity and settle with a coherent

identity (dysfunctional rigidity).

To summarize, our study has the following purposes: a) position interorganizational

literature more clearly within existing identity literature; b) reach a better comprehension of the

under-investigated relationship between identity formation and collaboration outcomes in

conditions of heterogeneity challenges and integration imperatives in general, and in particular c)

resolve contradictions and integrate existing perspectives on the role of interorganizational

identity formation for collaboration in IORs (i.e., small wins, dysfunctional rigidity, instability).

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Data and Methods

Research context

Our study draws on qualitative evidence about the setup and evolution of an inter-organizational partnership between multi-sector (i.e., public and private) organizations operating in a highly industrialized region in Western Europe. The partnership involved a Municipality, a Chamber of Commerce, three industrial associations representing private companies, a University, a Public Utility Company, a Regional Office for Competitiveness (supported by the European Union) and a Regional Innovation Office. The partnership had a long-term orientation and aimed at developing a strategic platform for collaborative innovation within the region. Specifically, the main project of the partnership implied the transformation of a wide ex-industrial area with local historical relevance into a science park serving as a base for interorganizational innovation projects. For the project, each organization articulated specific goals, committed resources and nominated one or more project representatives. To finance the project, partners had to complement public (i.e., competitive) funding with individual investments. At the beginning of 2014, a main building hosting research labs and offices (3500 m2) and a facility square (3700 m2) were inaugurated. At the beginning of 2015, partners began a new funding campaign and, at the end of 2016, started the expansion work of the science park.

This context is relevant to our study because it allows us to study the complex dynamics of an interorganizational collaboration between heterogeneous organizations operating across different sectors and enacting different goals and interests within a common frame, and in parallel, the formation of an interorganizational identity. Importantly, the continuous access to the field allowed us to adopt a process perspective that describes events as they unfold over time

and to study interorganizational identity formation and its interplay with strategic collaboration

practices at various moments in time.

Data collection

We collected data on the time span between 2009 and 2016, to cover the most significant events

in the life of the partnership, from the first collaborative moves, to moments of crises and

emergent strategies to exit the crisis. We collected archival data for the entire time span 2009-

2016. We entered the field in January 2011 and conducted observations and informal

conversations with participants until October 2013 when we began collecting semi-structured

interviews and performing continuous participant observation (until June 2016). Table 1 provides

a synthesis of the data collection methods employed, their duration, as well as detailed

information about the types of data collected through each method. In addition, appendix 1

provides a timeline of the main partnership events specifying the data sources from which they

were derived.

Table 1. Data sources with details on informants

Source	Data collection details	Data content
Observations and informal conversations	*Timespan:* 2011-2013 *Informants:* • Municipality: Major; Municipality Urban Planning Director - Project Chief Architect; • RIO: President, Managing Director • University: Chancellor; Vice-Chancellor; Engineering Department Dean 1; Engineering Department Dean 2; Engineering Department Responsible of Technology Transfer; • Chamber of Commerce: President • Industrial Association 1: Director; Innovation Officer 1 & 2.	• Initial stage of the partnership. • Meaning associated to the regional innovation strategy. • Partnership expectations and perceptions.

Semi-structured interviews	*Timespan:* 2014-2015	*Focus during first round:*
	Informants by organization (for a total of 42 interviews):	Partnership creation and initial stage of the partnership.
	• Municipality: Innovation Officer1 & 2; Municipality Urban Planning Director; Legal Advisor; Director of Joint Venture with PUC	Meaning assigned to the regional innovation strategy and to the partnership.
	• RIO: President; GM; R&D Officers 1, 2 & 3	Activities, ongoing projects and attributes of the partnership.
	• University: Chancellor; Vice-Chancellor; Engineering Department Dean 1; Engineering Department Dean 2 Engineering Department Responsible of Technology Transfer; Leaders of Research Lab 1, 2 and 3; Researchers (R1-R5) working in RL1, 2 & 3.	Private partner interactions
	• Chamber of Commerce: President	*Focus during second round:*
	• REO: Director; Innovation Officers 1 & 2.	• Use of the science park (mostly complaints).
	• Industrial Association 1: Director; Innovation Officer 1 & 2.	• Attributes of the science park.
	• Industrial Association 2: Director; Industrial Relations Officer	• Partnership identity.
	• Industrial Association 3: President; Innovation Officer	• Individual expectations on the multiplex area.
	• Public Utility Company: R&D Senior Manager	
	• Private Research Center: Leader	
Participant observations	*Timespan:* 2014 – 2016	• Public and private interactions in the partnership
	Type of participated events:	• Attributes of the partnership.
	• 10 Board of Directors meetings	• Physical attributes of the science park.
	• 3 Shareholder meetings	• Use of the science park.
	• 2 public events	• Comparing public rhetoric and private management of the science park.
	• 9 meetings between partner organizations	• Evolution of private discussions on the multiplex area.
Archival data	*Timespan:* 2009 – 2016	• Initial meetings and public events of partners and other regional stakeholders.
	Types of documents:	• Public commitment to the science park's project.
	• 10 press articles on the preliminary setup of a regional collaboration	• Public announcements and expectations on the science park's spaces.
	• 190 press articles about the science park project	• Physical attributes of the science park.
	• 8 documents about science park project posted on websites	• Municipality's calls for funding projects.
	• 13 internal documents of partner organizations (e.g., reports, budgets)	
	• 2 protocols regulating the partnership	
	• 6 public announcements and calls for funding	
	• 10 brochures of the activities of the partners	
	• 15 brochures of the events and activities of the science park	
	• 2 architectural projects	
	• 10 promotional videos	
	• 3 construction site plans	

Informal conversations (2011-2013). One of the members of the research group was

designated as technological transfer expert for the partnership, and had continuous opportunities

to interact with single partners, and to participate in partnership meetings (including boards of

directors -henceforth, BoDs) and formal events (conferences, round tables and workshops). We

used the opportunity of this role to take notes about the main events and practices in the

partnership and to conduct the first informal conversations with the top management, managers

and staff of the partnering organizations. These were held approximately once a month by the

research team member and regarded the partners' perceived strategic needs in relation to

innovation management, in general, and to the partnership, in particular.

    Semi-structured interviews (2013-2016). We also conducted 42 semi structured interviews.

Given the complex structures of the partnering organization, we typically chose our informants

to have a good representation of the top management (i.e., the mayor, local councilors,

presidents, chancellors, CEOs), and the operative roles of each organization (i.e., middle

managers, innovation and technology transfer officers and researchers assigned to the project by

their organizations). Table 1 gives a detailed description of the interviewee profiles (i.e., role

inside their organizations and/or inside the partnership) and describes how interviews were used

in the data analysis process. The interviews averaged 100 minutes each and entailed questions

about the formation and evolution of the partnership. We first asked our informants questions

about the motivations that led to the partnership creation and encouraged them to narrate the

most significant events of the partnership, from its creation to the date of the interviews. In

addition, we asked them to provide a list of activities, shared projects, and collaboration practices

within the partnership, from its setup to the current date. To establish connections with the data

collected in the preliminary phase, we also inquired about the goals, objectives and main ongoing

projects of each organization and how these were connected to the partnership. We also explored

informants' perceptions about each other's organizations and when applicable, whether these had

changed with respect to the informal conversations. The initial protocol did not include explicit questions on collective identity formation. However, references to a collective identity emerged early on in the analysis and were explored in later versions of the protocol. For instance, partners often referred to the 'founding values' of the partnership, and to their distinctiveness as a 'special mission for the region' made of 'unicity within diversity', 'innovation within tradition' and 'mutual benefits'. Also, when trying to explain to us 'who they were' and 'what they did' as a partnership, informants made references to science park artifacts such as construction projects, buildings, office spaces, or transportation infrastructures. To this purpose, by the beginning of 2015 we introduced in the protocol questions related to the meanings that informants attributed to the physical features of the science park and their connections with the partnership identity. To give some examples, we asked informants to explain what characterized their partnership (e.g., collective values, attributes, feelings), whether they considered the partnership unique and if so, in which sense, and to which extent the partnership values defined them as individuals, as members of their organizations and as members of the partnership.

In the last stages of the study, we used individual follow-up interviews to confront our interpretations about the collective process of identity formation with a select group of seven informants. From each organization, we selected those informants that we had already interviewed and that had either contributed significantly to our theorization (i.e., 'key informants') or provided contrasting information that we had pieced together during the theorization process (i.e., 'critical incidents providers'). All the interviews were recorded and transcribed verbatim.

Archival data (2009-2016). During interviews, informants either provided or indicated relevant documents. In parallel, we conducted a search on publicly available databases. We came

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up with 269 official documents and press articles that mentioned either the innovation partnership or the science park ranging from 2009 to 2016 (i.e., websites, protocols, public announcements, brochures, design and architectural projects, construction site plans). We used the archival data to integrate and triangulate data from interviews, especially for the timespan 2009-2011 during which we were not present in the field and had to rely on informants' retrospections. Table 1 details the types of archival data collected and their use in the interpretation process.

Observations (2014-2016). Starting in March 2014, we conducted participant observations (85 hours) in all the occasions when the partners met to discuss about the partnership or its projects (26 meetings overall). We participated in all the BoD meetings that took place in the 2014-2016 timeframe, in most operative meetings, but also in all the ceremonies, conferences, and exhibitions related to the science park and the partnership in general. We took field notes during most of the meetings and transcribed them into extended files.

Data analysis

Data analysis and interpretations strategies followed a grounded theory approach (Strauss and Corbin, 1998). Specifically, by following a process-oriented, multi-level perspective (Langley, 1999), we engaged in the careful study of the collaboration practices related to the science park, and their interplay with identity claims at the level of the partnership. During the first phases of development of the grounded model, we open-coded for broad categories. At this stage, we highlighted phrases and paragraphs to identify similarities and dissimilarities across informants. Where possible, to preserve informant-level meanings, we used 'in vivo' labels (terms actually used by informants) (Locke, 2001). This was particularly useful in the case of metaphors and

other powerful expressions such as 'identity pillars', 'win-win mentality', 'struggling to

implement strategic plans', 'controlling heterogeneity' or 'walking the bridge between past and

present' that described informants' attitudes and emotions regarding the attributes of the identity

and their impact on the collaboration. Two of us performed parallel independent coding and met

regularly to analyze sets of two or three transcripts, discuss the independent coding and solve

disagreements through discussion. The other two participated in all the meetings and performed

selective coding to help resolve disagreements that appeared during discussions. We further

grouped the first order concepts into more 'abstract' inclusive categories, i.e. second order

themes and aggregate theoretical dimensions. To give an example, while going back and forth

between theory, data collection and several rounds of data analysis, we identified a set of initial

collaboration practices such as 'identifying heterogeneous strategic gaps at the regional and

organizational level' and 'signing an innovation agreement to ensure integration and control

heterogeneity'. These two first order concepts were further grouped into the second order theme

'collaboration set up despite heterogeneity'. The second order theme 'collaboration set up

despite heterogeneity' was aggregated with 'swift I-O identity set up' in the theoretical

dimension 'anticipated alignment between swift IO identity and collaboration practices'. By

performing similar aggregations on our longitudinal data, we identified three other aggregate

theoretical dimensions: lock-in of anticipated alignment, emergent misalignment and emergent

realignment. The data structure in Figure 1 provides a representation of the progressive

aggregation of our data. Table 2 provides field notes that exemplify first order themes.

In a following step, we further engaged with the temporal dimension of our data using a

processual analysis (Langley, 1999). We built chronological figures and tables linking identity

processes with strategic collaboration practices (see Ravasi and Philips, 2011; Langley and

Ravasi, 2019). We then split the chronological order into four stages based on significant partnership events that marked transition points (see appendix 1). We then started connecting themes within and across stages. For instance, we started creating multiple connections between the second order themes and aggregate theoretical dimensions. Further iteration between our emerging theoretical framework and database helped us triangulate the statements of our informants with factual data that could substantiate them (e.g., we used archival documents such as the innovation agreement, press articles or roundtables reports to search for 'anticipated alignments' – i.e., strong claims of the three pillars of partnership identity that accompanied partners' initial collaboration propositions).

Figure 1. Data structure

(continued next page)

First order (informant) concepts   *Second order themes*   *Aggregate analytical dimensions*

First order (informant) concepts	Second order themes	Aggregate analytical dimensions
Acknowledging heterogeneous strategic gaps at the regional and organizational levels despite integration intentions	Setting up collaboration to face heterogeneity	Anticipated Alignment
Signing an Innovation Agreement to ensure integration and control heterogeneity		
Setting up commitment to regional solidarity (identity pillar 1)	Swift IO identity setup	
Setting up in-win cooperative mentality (identity pillar 2)		
Setting up innovation from tradition (identity pillar 3)		
Providing evidence of commitment to ensure mobilization	Crafting a long-term strategic plan	Locked-in Anticipated Alignment
Sharing resources while controlling investments		
Bridging between established and new sources of competitive advantage		
Substantiating commitment to regional solidarity through infrastructural connections	Swift IO identity reification	
Embodying win-win cooperative mentality by organizing for physical proximity		
Affirming innovation from tradition by embedding historical and technological artifacts		
Acknowledging project delays	Struggling to implement strategic plan	Emergent Misalignment
Lamenting scarce resource allocation		
Lamenting lack of initiative		
Commitment to regional solidarity contrasts with delay in materializing infrastructural connections	Swift IO identity threat	
Win-win cooperative mentality contrasts with small fragmented space		
Innovation from tradition contrasts with empty space		
Buying time to align projects	Revisiting strategic plan	Tentative Realignment
Revisiting pillar 1: From commitment to regional solidarity to targeted (business-oriented) regional commitment	IO identity re-elaboration	
Revisiting pillar 2: From win-win cooperative mentality to intermediated approach		

Table 2. Examples of field notes

Second order themes	First order concepts	Selected evidence and field notes
Setting up collaboration to face heterogeneity	Acknowledging heterogeneous strategic gaps at the regional & organizational level despite integration intentions	RIO, Municipality and PUC searching for new financial resources for their projects (observation meetings)
		Partners acknowledging their own difficulties during the economic crisis and trying to exploit regional historical excellences (observation round tables)
		"Right now, we need resources because we can't go on doing things on our own. The territory needs an integrated innovation vision, we need partners to team with our companies in regional funding projects and start sharing [project] promotion costs too (President, Ind Ass 2- interview)
		"The challenge now is to make our PhD programs interdisciplinary, cross-sectorial and appealing for businesses. It's difficult right now because our careers are based on completely different logics (…). We need to collaborate more, first among us and then with external actors, become integrators (…)" (University Dean, interview)
	Signing an Innovation Agreement to ensure integration & control heterogeneity	Committing to collectively pursue regional strategic goals on open innovation and technological transfer (Innovation Agreement, document)
		Creating a 'unique regional subject (Innovation Agreement, document)
		"By signing the Innovation Agreement, we promised to stop looking into our own backyards all the time (…) of course we have different priorities but also so many similar needs. We need to leave these differences behind us and look towards the future together. When that day we entered that room and put our names on that sheet of paper, we all were all aware of that" (RIO President, press article)
Swift IO identity setup	Blending organizational & regional identity claims	"This region has always been solidary, it's been famous for that for decades (….) our [Municipality] full commitment to citizen welfare walks on the same path (…) and how we have the opportunity to integrate new pieces [such as] RIO's innate attitude for innovation, and industrial associations' economic sense" (Innovation Officer 2 Municipality, interview) "We are researchers, they are doers, if we keep a cooperative mindset both qualities will come at hand" (Leader of Research Lab 2, University, interview)
	Setting up commitment to regional solidarity (identity pillar 1)	Partners expressing the desire to create a strong partnership based on the common value of regional solidarity (press articles)
		"We are no longer in the days in which each of us grew vegetables in their own little garden (…) If we think like that we are all going to become the farmers of the last century (laughing), we must change mentality and become visionaries, we must think about our territory as a whole, and act as a family, if one of us has a vision, he should feel inclined to share it with the others" (President of Municipality-PUC Joint Venture, interview)
	Setting up a cooperative win-win mentality (identity pillar 2)	Partners describing cooperative mentality as the main feature of the partnership (internal documents, press articles)
		"If I don't connect the gear, each wheel will do its part, but it will never become a collective work, a machinery, so to say. The only way to obtain a real multiplication effect is to work as one and orient our efforts to the same purpose (…) This means we are like a cycling team in which the timing of everybody is determined by the timing of the weakest element" (RIO Manager, interview)
		"Being part of this partnership also imposes you a redefinition of who you are and how you collaborate (…) having a cooperative win-win mentality, it's something that will show" (Ind. Rel. Officer, Ind Ass. 2, interview)
	Setting up innovation from tradition (identity pillar 3)	Partners drawing on regional values to describe partnership's focus on innovation from tradition (observations, round tables)
		"There is a third element that we need to consider as we look forward, and that is the innate predisposition of this region to cooperation, this is something that comes from the rural days, from the ancient roots of this territory (RIO GM, interview)"
Crafting a long-term strategic plan	Providing evidence of commitment to ensure mobilization	Partners acknowledging the need to create a three-year strategic plan for the partnership to prove commitment and guide action (meetings, Innovation Agreement)
		"A strategic plan for the following three years is what we need to move this forward. The Partnership needs that each of us is committed and willing to respect the commitments taken in the Innovation Agreement" (RIO President, interview)

	Sharing resources while controlling investments	ROC affirming the need for an 'innovation hub' to act as 'collector' of partners' innovative resources and competencies (press articles)
		"Strategically speaking and (…) ideally speaking, this science park must have a wide mission, it must become a resource collector for the partnership, not just for some research labs of the University, if we want to cross boundaries, we all need to contribute, and of course (…) keep control on shared investments" (Head of Department, University, interview)
	Bridging between established & new sources of competitive advantage	Partners proposing to leverage historical regional sources of competitive advantage (e.g. mechanical industry) to attract investments in new areas of competitive advantage (e.g. renewable resources) (meetings, press articles)
		"I agree with this strategic plan because we need to start doing research in our strong areas like welfare and children education, but also in those that have become our strength in more recent times like mechatronics, agroindustry, and energy (…) we have, let's say, a fertile humus, because they are connected to each other thanks to the history of this region (…) we need to find a home [for them]" (Leader of Private Research Lab, interview)
Swift IO identity reification	Substantiating commitment to regional solidarity through infrastructural connections	Municipality describing the science park as a further step in highlighting the partnership's commitment to solidarity (press articles)
		"The park is close to transportation, close to the center, we need to create proper infrastructures and we need to let people know about them (…) it can represent the perfect logistic solution, the perfect meeting place for everyone, and most importantly, a different meeting place, a…sparkling environment, let's say, where we, partners, can feel energized" (Leader of Research Lab1, University, interview)
	Embodying win-win cooperative mentality by organizing for physical proximity	RIO allocating co-working spaces to reduce physical distance between partners (ind. associations, University, CoC, private research lab and themselves) and create a "physical environment that breathes a cooperative attitude" (observation meeting)
		"Now that we were asked to be present in the science park, I think this collaboration mindset will further evolve, so RIO proposed us to take part in a co-working rotation program, and we will be there once, twice a week, and we can organize some of our meetings there, and for sure when researchers will be there, and other industrial associations will be there, and I can say to one of my companies, stop by and I'll make you meet in person the researcher who does that research. So, I think collaboration will become more spontaneous and organic, so to say, because it's true that now we see each other in reunions all the time, but it's different, the exchanges we need can only stem from physical closeness and mundane talks" (President Ind Ass 2 -interview)
	Affirming innovation from tradition by embedding historical and technological artifacts	Municipality chose the science park's space as symbolic place for the partnership given its historical value and its innovation connotations (press articles, internal documents)
		Municipality's architect decides to preserve some symbolic materials and artifacts of the original space as to preserve the "two souls of the area: innovation and tradition" (internal documents)
		"(City name) is doing the right thing, said (name of famous journalist). There are no boundaries between present, past and future. The requalification of the science park area is the best material and symbolic evidence. The science park is a locus of memory and innovation altogether, and we may even call it a living museum" (Municipality councilor, press article)
Struggling to implement strategic plan	Acknowledging project delays	Ind Ass 1, 2,3, University manifesting difficulties in doing things together (observation, meetings)
		"From what I know from my University colleagues, there are many organizing issues behind this delay [to transfer research labs in the science park] (…) official calls, public transparency, I know it may sound crazy, but they are stuck in the tendering call for furniture (laughs), then they will need to bring in the equipment, but they first need the furniture, so, yes, it's complicated". (RIO Innovation Officer 2, interview) "It's been one year, and nothing happened, this is the true, we haven't done anything yet! (Innovation Officer, Ind Ass 1).
	Lamenting scarce resource allocation	Municipality, CoC, University & PRL hesitating to allocate resources to science park (BoD meetings)
		"This park costs money. Who will be taking care of this? I'm not casting blames, but investments need to be balanced" (Head of Department, University - interview)
		"We are strangled, right now, money is getting less every year, and salaries need to be paid every month, you know? I'm tired of reminding this all the time, it's ironic because on the one hand commitment to the common cause is growing but on the other, ears are getting deafer every day" (RIO GM, interview).
	Lamenting lack of initiative	Ind.Ass.3 complaining about other partners' scarce involvement in the park's activities (meeting)

		"We built the space but the project behind it, somehow isn't there. We entered the science park and we sit there in this physical space that… in the beginning of the project we talked about a physical space, yes, but we also talked about building a collaboration platform around it, to give it life, but we just seem to have got stuck after the first part (…)" (Director of Private Research Lab)
		"We keep on talking about this co-working space, we need two tables and a Wi-Fi connection, let's do it already, why don't we do it!" (Director, Ind. Ass 2, interview)
Swift IO identity threat	Commitment to regional solidarity contrasts with delay in materializing infrastructural connections	"It's true, even seeing the glass half full we just started to see the first evidence of claims that have been in the air for 10 years…Yesterday I took the train, so I went to the (name of high-speed train station) and I was thinking, If only we had more integration between these strategic areas…let's say that the science park is on, let's say it has a roof. It's a small roof for many people, and these people have not done much yet. But it exists. It is the breathing spirit of this partnership and we need to take good care of it" (President, CoC, interview)
	Win-win cooperative mentality contrasts with small fragmented space	"Which science park are we exactly talking about? The one that should express our cooperative spirit or the small, fragmented cube in which I'm expected to squeeze half of my guys and a tenth of my equipment?" (Leader of Research Lab 1, University, interview)
		"Closed doors, small offices, forever empty coworking, this is not in the cooperative mood of this partnership" (Innovation Officer 2, RIO, interview)
	Innovation from tradition contrasts with empty space	RIO complaining about being the only tenant inside the science park to pursue partnership's mission of innovation from tradition (BoD meeting)
		"Yes, it's empty. There is for sure the will to overcome this emptiness and show our best side but, as it is right now, the science park looks more like a real estate project than a living lab that brings together past and future. It is, indeed, a requalification project but up to this point it has been a real estate qualification project, and an empty one, on top of everything. How to fill it? That is a tough question (…)" (Director, Ind Ass. 2 -interview)
Revisiting strategic plan	Buying time to implement the strategic plan	Municipality proposing to extend the area of the park to the adjacent buildings (multiplex) (observation meetings & press articles)
		Partners promising to move in the park and implement the strategic plan once the new multiplex area is restructured (observation meetings)
		Ind. Ass. 1,2,3 and CoC waiting for multiplex to be finalized before confirming the desk rotation program in the science park (observation meetings)
		"The expansion gives us the tools to strengthen the partnership which is really a high-stake bet for our territory. And we've already said it many times, the Mayor repeated it also last week, we need a germination site, an emblem in which each of us can feel fully represented (…) This is not something that will give results tomorrow, it's something we are planning for the future, we have just started restructuring building n18, we will need at least 2 years to restructure the whole area (…)This is not lagging because we must do our best to arrive ready at the inauguration and convinced that this space represents us 100% "(President of Municipality-PUC Joint Venture, interview)
IO identity re-elaboration	Expressing imperatives to maintain the strong identity of the partnership	"We probably went a bit too fast at start but when you have a vision and the tools to make it real everything seems very feasible. It is feasible. I'm not saying we have failed as a partnership. I am saying we are not black or white (…) As you said, we probably were too optimistic about us being compatible, but that does not make us incompatible but rather craving for compatibility" (Municipality Legal Consultant, interview)
	Revisiting pillar 1: From commitment to regional solidarity to targeted (business- oriented) regional commitment	Partners use the multiplex to describe the partnership as less focused on regional solidarity and visible for business (observation conferences)
		Municipality-PUC JV proposing to allocate the space in the multiplex to businesses to "redirect the partnership's potential" (observation meetings)
		"What we need right now is more integration and business orientation, this sense of purpose gets a little lost in the science park, but as soon as the multiplex is ready, we will recover it. Before, our vision was more like an infrastructural hub, we need to turn this into a more product-oriented vision and give it economic legs. Of course, we need to collaborate more for this to happen" (Innovation Officer, Ind. Ass.3, interview)
	Revisiting pillar 2: From win-win cooperative mentality to intermediated approach	Partners arguing that the multiplex calls for unity and fuels interest in concrete collaboration plans that need intermediation (observations, meetings)
		Partners naming RIO as the future broker of the partnership inside the multiplex (observations, meetings)
		"Today this partnership is more aware of itself than it was a couple of years ago. (…) People still need to understand what technological transfer is, what RIO does, but for this to happen, we need to become more structured once we take possession of the multiplex, we can no longer act like a fluid network of people coming in and out, we need to give people the idea that we can give specific answers to specific problems, we need to develop an intermediator mentality" (Technological Transfer Represeant, University -internal document for BoD)

Empirical Evidence

Our grounded model (see Figure 2) depicts the interplay of partners' collaboration practices and the processes of interorganizational identity formation. The interplay evolves along four different stages, each characterized by a different collaboration-identity interplay: anticipated alignment, locked-in anticipated alignment, emergent misalignment and tentative realignment. In the following, we describe each stage in detail.

Stage 1: Anticipated alignment

To initiate collaboration, organization representatives identified strategic gaps (i.e., needs, problems, requirements) both inside their own organizations and at the regional level. On the one hand, partners acknowledged the heterogeneity of identified gaps; on the other, they proposed to deal with them collaboratively, i.e. through integration inside the partnership. To ensure integration, a collaboration agreement was signed, and the partnership was formalized. This process was paralleled by the setup of a swift interorganizational identity. The swift identity manifested promptly, i.e., early in the life of the partnership and in a clear-cut manner, i.e., based on well-defined attributes, despite the few occasions in which partners explicitly confronted one another on its underlying claims. The collaboration agreement thus determined an 'anticipated alignment' between collaboration and swift interorganizational identity. The alignment was 'anticipated' because the partnership identity was forced into being before partners resolved concerns regarding the existence of heterogeneous strategic gaps at the partnership level and doubts about their ability to deal with them collaboratively.
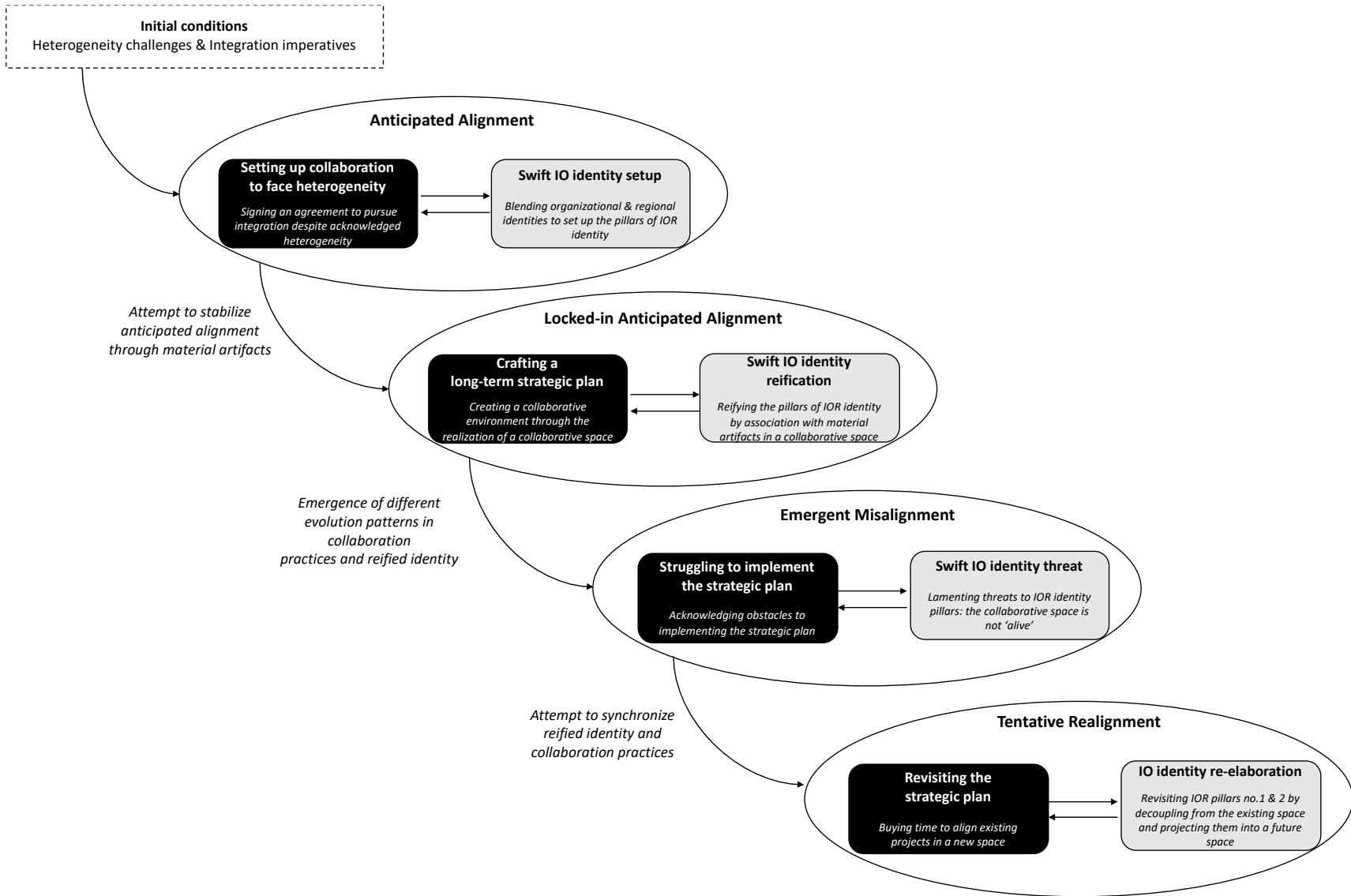
Figure 2. A grounded model of the interplay and evolution of collaboration practices (black boxes) and collective identity formation (grey boxes) in IORs.

Setting up collaboration to face heterogeneity

Acknowledging heterogeneous strategic gaps at the regional and organizational levels despite integration intentions. In the very first stages of the partnership, partners organized roundtables to identify strategic gaps concerning the development of their region. Data from informal conversations, together with press articles and public declarations of the period, reveal that each partner lamented the negative effects of a pervasive economic crisis that had afflicted the region for years in a row. Due to limited resources, the distinctive competencies that historically characterized the region at large (i.e., preschool education, mechatronic engineering, agro-industry, social welfare) were insufficiently exploited and promoted by each partner. Interorganizational collaboration projects were indicated as the one-best-way to regain competitiveness and recognition as a region.

At the same time, partners acknowledged that the partnership was confronted with heterogeneous goals, given that each organization identified its own strategic gaps to be filled in the partnership framework. Specifically, organizations designated one or more members (top managers, innovation officers, heads of research labs, etc.) to represent their interests in the partnership. To address this concern, each organization issued press releases regarding its own strategic gaps (see appendix 1 for the event timeline). In addition, during the first meetings of the partnership, organizations' representatives discussed these gaps with the other partners and suggested ways the partnership could fill them. To give some examples, although all partners mentioned a strategic gap relative to pooling new resources from other sectors, partners started to realize that pooling new resources meant different things for each of them. For the Municipality and the Public Utility Company (PUC) it implied finding new partners for long-term social

welfare and urban regeneration projects; for the University, identifying new research sponsors

and dissemination partners; for the industrial associations, configuring a wider range of member

services without having to develop them internally. Thus, partners acknowledged that the

partnership gaps were 'manifold' and 'divergent', something we labeled as 'heterogeneous'. In

the following field note, the President of the Chamber of Commerce exemplifies this issue:

"The challenge here is to get everybody aboard around a shared idea, now ideas are all over the place, the Mayor wants an electoral showcase, the University is hunting for new funds, PUC are trying to redefine their corporate social responsibility strategy, and we're also going through leadership changes as I was telling you before (...)[it is] a mess yet everyone is hoping to get something out of this partnership" (CoC President, informal conversation)

Signing an innovation agreement to ensure integration and control heterogeneity. Despite

the diverse ways in which partners framed the gaps, we also found that integration was identified

as a viable way to control heterogeneity. By framing each other's gaps according to a logic of

complementarity, partners hoped to prevent the uncontrolled proliferation of heterogeneous

interests in the partnership (see table 2). To ensure the transition from heterogeneous to

integrated goals, partners sealed their collaboration intentions through an 'Innovation

Agreement' that set out the main strategic gaps of the region and mentioned a list of strategic

gaps at the partnership level that ideally represented those set out by each partner individually. A

main objective of the partnership was to create a 'unique regional subject' responsible for the

management of innovation projects. By signing the agreement, organizations committed to

collaborate, invest resources, share information, and contribute to the creation and monitoring of

a three-year strategic plan regarding the implementation of the partnership's objectives. The

following field note exemplifies the role played by the Innovation Agreement in ensuring

integration, despite the acknowledged heterogeneity at the partnership level:

"The innovation of a system cannot be accomplished with the lone efforts of single organizations, but only thanks to a guided, integrated and participative initiative of the main stakeholders of this region (...). This agreement offers wide space for collective action, without contrasting the finalities of single members, their specific goals, competencies and fields of action. A unitary and integrated innovation strategy for the region (...) can complement existing organizational, regional, national and European strategies, while fighting against recurrent and dispersive redundancies." (Innovation Agreement)

Swift interorganizational (IO) identity setup

As partners acknowledged the heterogeneity of strategic gaps at the partnership level, they

expressed the need to create a collective identity to support the integration imperative. We use

the term *swift interorganizational identity* to indicate the identity manifested in the early days of

the partnership. The identity is swift because of the promptness and velocity with which the

partners drew on attributes of their regional identity and on the single organizations' identities to

forge what they called 'the three pillars of the partnership identity': commitment to regional

solidarity, win-win cooperative mentality, and innovation from tradition. As follows, we describe

the three pillars of this particular swift identity and explain how each of them was shaped by

elements that partners borrowed from their superordinate (i.e., regional) and subordinate (i.e.,

organizational) identities and assembled through strategies of similarity and/or complementarity.

Commitment to regional solidarity. First, partners affirmed that the main distinctiveness of

the partnership was a strong commitment to regional solidarity. The partnership constituted a

concrete possibility to reaffirm the region's natural inclination towards social and economic

welfare (regional identity claims). Heterogeneous attributes derived from partners'

organizational identities were put together by establishing a relationship of complementarity with

respect to each other and with the regional identity claims. Some informants referred to the

process of building complementarity as "putting together different pieces of a large puzzle". To

give an example of the complementarity strategy, by invoking the University's ability to adapt to

collective needs, the Municipality's continuous dedication to public welfare, the industrial

associations' best-in-class economic support, and the Regional Innovation Office (RIO)'s

identity as a regional integration 'facilitator', partners used 'pieces' of their organizational

identities to complement the regional identity claims (i.e., natural inclination towards social and

economic welfare) and create the first pillar of the partnership. The following excerpt shows how

partners assembled heterogeneous organizational and regional identity attributes in a

complementary way:

"I can use a citation from the Holy Bible to say that the partnership exists only where two or more
subjects reunite in the name of innovation and regional solidarity. Where people come together to reflect
on innovation, to understand what they can do together to make this region better, this partnership
materializes, as a sort of Holy Spirit. In RIO we have this vocation because we are born as facilitators
(...) The Municipality is an expert of citizen welfare, this is something we all know (...) for the University
it is more complicated, but they have the third mission for public engagement that bind them to our
region." (RIO GM, interview)

Win-win cooperative mentality. As they interacted with each other, with us or with the local

community at large (through reports, ceremonies, conference presentations, etc.), partners

explained that another distinctive characteristic of the partnership was the cooperative win-win

mentality. This mentality is a salient characteristic of a region that has longstanding recognition

as the 'nation's finest example of social cooperation' (article excerpt), but also a characteristic of

the partnering organizations. From this standpoint, partners used the strategy of similarity to

match attributes of their organizational identities with attributes defining their broader regional

identity. For instance, members of RIO and members of the Regional Office for Competitiveness

(ROC) defined themselves as 'collaboration promoters', 'catalyzers', 'accelerators', and

'integrators' and explained that since cooperation was in 'everyone's DNA', it defined the entire

partnership. In a similar way, the University Dean described the University as 'strange', a 'lonely

animal' with a strong identity but in great need of opening to others and incorporating aspects of

partners' identities, such as being more industry-friendly and acquiring a collaborative mindset. As a result, by defining themselves as heterogeneous members of the same 'team', 'garden' or 'machinery', partners adopted win-win cooperation as the main road to mutual development. The following excerpt exemplifies the strategy of similarity by which partners assembled pieces of their regional and organizational identities (for further examples see also table 2):

"We are one because my problems are also their problems (...) and I know that my weakness, or this problem here that I've been struggling to solve for years, who knows, may turn out to be one of their strengths (...) We have set the basis, and there is great potential, what we need to do in the next six months is to make people talk more, and make this stronger" (RIO President, interview)

Innovation from tradition. We found that partners used press articles and press conferences to describe the partnership as an intended continuity between the region's glorious industrial past and its current attempts to increase its innovativeness, something that was often referred to as 'innovation from tradition'. As was also the case for the other pillars, some partners used similar attributes of their organizational identity claims to directly feed the partnership identity (i.e., similarity strategies), while others manifested the need to integrate the very different attributes of their pre-existing identities in a common frame (complementarity strategies). For instance, the industrial associations explained that their deep knowledge of the historical industrial companies of the region was complementary to the University's 'eye on the future' (i.e., exploration of new frontiers, rigorous research, high social impact) and that together the two approaches could bridge research innovation and industrial tradition. In the same way, the Chamber of Commerce (CoC) manifested the need to grow as far as possible away from the typical image of the bureaucratic administration and assert an identity claim based on innovation leadership, similar to that professed by the University and by industrial firms:

"Our regional model has been known worldwide for over a century (...) We [partners] want to become a reference point both for those who know about or have lived the glorious times of this industrial

area and for new players oriented towards the future, such as innovative spin-offs, University research
labs or corporate R&D labs (...) the purpose is that we become a living lab that breathes both innovation
and tradition."(CoC President, press article)

In sum, the three pillars described above were set up and assembled in such way (i.e., with

the help of two strategies: similarity and complementarity) that a new interorganizational identity

was created. The new interorganizational identity was swift because it prompted partners to think

about the future and engage in immediate courses of action, instead of thinking about the risks

and threats of collaboration, or, to use our informants' words, it implied dreaming about the best

they could be together, instead of fearing the worst they could make each other become. The

innovation agreement forced into being both the collaboration and the identity pillars before

doubts and concerns regarding the existence of multiple sources of heterogeneity were resolved.

The following excerpt exemplifies how anticipated alignment acted as a 'disciplining force'

inside the partnership:

"The most difficult thing today is fighting our fears, including that of making mistakes, and paying for
them. For this we need courage, the quality that we often find in the young generation. (...) We are called
to move towards greater integration, the kind that quantum physics teaches us, where each electron
depends on other electrons within energetic bonds. We are like electrons. Through this partnership we
will strengthen ties and defeat our collaboration fears." (Former Municipal Mayor, press article).

Stage 2: Locked-in anticipated alignment

Six months after the Innovation Agreement, partners worked to define a long-term strategic plan

for the partnership and continued to develop the three pillars of the interorganizational identity.

To encourage full commitment, partners commonly agreed that the partnership had to assume

concrete form immediately. The second stage thus describes the period in which partners

materially stabilized the identity claims and collaborative practices of the previous stage by

associating them with the realization of the science park. This association contributed to

confirming and stabilizing (i.e., locking in) the anticipated alignment between identity and

collaboration forged in the previous stage.

Crafting a long-term strategic plan

After signing the innovation agreement, partners started drafting a three-year strategic plan

for the partnership. The plan focused on the creation of a collaborative environment by means of

a three-fold agenda: providing evidence of commitment to ensure mobilization, sharing resources

while controlling investments, and bridging between established and new sources of competitive

advantage.

Providing evidence of commitment to ensure mobilization. During interviews and meetings,

informants repeatedly expressed the need to provide each other with evidence of commitment to

the partnership. This implied a manifested desire to make collaborations 'feel real' such that the

economic development of the region could be 'seen with one's eyes' and 'touched with one's

hands', as informants termed it. To this purpose, partners planned to realize joint projects with

tangible components inside the science park, such as an information office for innovative

companies, an innovation museum, or an innovation route that integrated other strategic areas of

the city. According to manifest beliefs, realizing such concrete projects in the science park

represented a warranty that each partner took seriously the responsibilities stipulated in the

innovation agreement and was willing to mobilize efforts and resources to the common cause:

*"We need to show each other and the city that we can actually do things together. Words are
comforting but at this stage they may not be enough (…) If we manage to prove that we have actually
done things together, then the collaboration will grow more easily, and people will be more willing to
invest." (Manager Industrial Association 3, interview)*

Sharing resources while controlling investments. Partners agreed about the importance of

sharing resources, as promised in the innovation agreement, while also controlling for the ways

in which these resources were invested. A widely-held opinion among informants was that

collaboration could take place more easily if actors reduced physical distance and concentrated

resources in the same place. For instance, inhabiting adjacent offices and financing joint

laboratories provided motivation to keep investing and, at the same time, gave partners the

feeling of control over how their money was spent, as illustrated in the following excerpt:

"I know it might sound strong, but I'm sure the shortest way to an efficient collaboration is being
forced to sit at the same table and look each other in the eyes. If we inhabit adjacent offices, we will meet
in the hallways, we will sit in the same conference rooms, we will find out about each other's projects and
gather the necessary elements to co-create new things." (Innovation Manager Ind. Ass.1. interview).

Bridging between established and new sources of competitive advantage. Partners expressed

the belief that building the science park as a tangible collective space also implied the creation of

a walkable bridge between past and future, between the historical sources of competitive

advantage of the region (mechatronic industry, social welfare, preschool education), and the new

advantages deriving from strategic investments in new areas (renewable resources, digital

startups, high-tech spinoffs). As suggested by the following excerpt, keeping an eye on the past

while planning together for the future was core:

"We have strong roots, the excellences that have always characterized this region must be our
lighthouse (...) We need to build something that will last for the future, that will be a trace of our
commitment to this region (...) Building something in common can help us exit the claustrophobia of our
day-to-day problems and help us plan for the future in ways that are less biased (...) The park is our
departing point for a long journey." (President of the Chamber of Commerce, BoD report)

Swift interorganizational identity reification: reifying the three pillars of

interorganizational identity

By first designing and then building the science park, partners further reified, i.e., made more

concrete by associating with material artifacts, the three pillars of the interorganizational identity.

Substantiating commitment to regional solidarity through infrastructural connections. As

partners met to design the science park, they opted for interconnecting the science park building

with other strategic areas of the city, including the University campus, partners' headquarters in

the city center, the high-speed train station and the hospital area. Not only did this imply

designing new transportation infrastructures (shuttle busses, parking lots, underground passages

etc.), but it also communicated to potential visitors the existence of strategic area

interconnections (e.g., creating an interactive multi-site map, organizing multi-location events,

cross-disseminating locations, etc.). According to partners, such interconnections were tangible

proof of the partnership's real commitment to regional solidarity because they created cascade

implications for partners and for many other stakeholders of the region. For instance, a widely

held opinion was that once the park was finalized and became inhabited, partners would

gradually bring service to each other and to the community at large, while also drawing in

additional stakeholders. A design project that included imagined features and functionalities,

mockups, and renderings in 2D and 3D had the purpose of ensuring the space would respond to

everyone's needs and facilitate regional solidarity. It is interesting to notice that as actors

manipulated design artifacts, they behaved as if the space had already materialized, thus

manifesting a consolidated commitment to regional solidarity:

"Have you seen the renderings? On our website, I can show you, you'll understand everything,
perhaps we won't even need this interview (starts playing the videos). So, this is the new access street,
you see the huge parking lot in the square? It's where the professors, and the entrepreneurs, and the
other people will park, and here is where they get in, and they will find someone at the reception filtering
and sending them to the right person (…) here, you see, we connected the science park with the [name of
international center for preschool education] because we believe that the space must become more and
more integrated, without separations, so we are trying to create easy access so we can all feel part of the
same community." (Municipality Director, interview)

Embodying win-win cooperative mentality by organizing for physical proximity. To

strengthen the win-win cooperative attitude that characterized the partnership, partners

envisioned a collaborative space with tangible features that ensured the constant and continuous

interaction between partners. In particular, we identified a widely-held belief that physical closeness could gradually transform into deep psychological closeness facilitating partners' cooperative win-win mentality. In keeping with this belief, partners asked architects to divide the internal space into private (about 70%) and shared areas (about 30%), making sure that the setup of the private areas communicated proximity, i.e., offices had the shape of wooden cubes with transparent glass doors that, taken together, evoked the shape of a beehive. At the same time, partners requested that the common areas would be as open and interactive as possible. For instance, co-working and open spaces were situated at each floor of the building, and a program of desk rotation among partners was drafted during collective meetings (see table 2 for further excerpts). According to our informants, 'inhabiting the same place', 'looking each other in the eyes' and 'paying attention to each other's practices' consolidated the partnership's identity, and in particular, its 'cooperation virtues', as expressed by the general manager of RIO:

> *"We figured out that it was necessary to have a physical space for the partnership, a collective headquarters in which we can say to everyone: please have a seat and in no time you will find yourself immersed in a tangible network. If we stay together, I mean physically together, we can win against disaggregating and alienating forces and our cooperation virtues can prevail. We have the win-win attitude; the park can give us the right structure. Only this way will we grow distant from those past competition mechanisms that no longer work." (RIO GM, interview)*

Affirming innovation from tradition by embedding historical and technological artifacts. In order to stay coherent with the principle of innovation from tradition, designers enacted a partial conservative restoration of the building and of the artifacts that belonged to the historical company operating in the area from 1901 until the early 2000s, when it transferred its operation elsewhere, following an acquisition. The company was well-known in the region for its continuous ability to innovate, having gone from a railway construction foundry to a colossal mechanical factory, to eventually becoming internationally known for its production of fighter

plane engines. To communicate continuity, some of the symbolic artifacts of the company were

preserved, such as the industrial bricks-in-sight layout of the old building, while iron and steel

decorations were used to create a 'retro-futuristic design'. Additionally, since the company had

gradually transferred its activities elsewhere, the area remained abandoned for some years and

became covered in graffiti by renowned local artists. These works were also partially restored

and integrated in the science park, together with high-end sustainable and smart technologies, .

As the following excerpt shows, by embedding artifacts from the heyday, graffiti from the

transition period, and state of the art technologies of the present, partners confirmed their

intention to use the partnership as a bridge between innovation and tradition:

"The science park recovers an urban space that is dense in history and converts it to innovative uses, in a perspective of constant cross-fertilization between industry, society and culture; past, present and future. The open perspective of this partnership not only respects the past and anticipates the future but also pays maximum attention to the spontaneous cultural artifacts of the last years that make our area a nationally and internationally renowned lab for urban writing and graffiti arts." (Municipality-PUC Joint Venture website - report)

In sum, as partners designed and built the science park, they 'materialized' their

collaboration plan and 'stabilized' their identity pillars by associating them with material

artifacts such as renderings, infrastructure projects, office spaces, old buildings and graffiti walls.

In this sense, material artifacts locked in the anticipated alignment from the previous stage.

Stage 3: Emergent misalignment

We found that as soon as the park was finalized and the collaboration plan had to be

implemented (October 2013), the locked-in anticipated alignment in the design stage turned into

an emergent misalignment. On the one hand, partners lamented a set of unexpected obstacles in

the implementation of the collaboration plan. On the other, such obstacles were dissonant with

the identity claims embodied in the science park building, in the sense that members' actual

ability to collaborate was deemed underdeveloped with respect to the strong identity claims of

the partnership identity.

Struggling to implement the strategic plan: acknowledging obstacles.

Once the park materialized and partners were required to start collaborating on a daily basis,

they lamented difficulties in implementing the envisioned collaboration plan and mentioned

three main obstacles: project delays, scarce resource allocation and lack of initiative.

Project delays. After the inauguration of the park, informants started manifesting frustration

about the unexpected difficulties in bringing the collaboration to life, admitting their struggles

with conflicting goals, the tensions between divergent interests and the lack of effective

communication inside the partnership, which at times resulted in delayed project kick-offs, and

numerous other times in projects that did not materialize at all. As a consequence of project

delays, in two years' time only four conferences, three company visits, and a dozen meetings had

been organized inside the park, and out of five research labs, only one became operative in the

year after inauguration, while the others started operating only 2.5 days a week beginning in

2016. In the same way, the infrastructure projects envisioned to connect the strategic areas of the

city with the science park were only gradually picking up (see table 2 for examples of excerpts).

Scarce resource allocation. Many partners also complained that the resources organizations

allocated to partnership projects had decreased over time until they became extremely limited.

For instance, Municipality representatives hesitated to invest resources in an innovation museum

project for the science park because they were not sure about other partners' (i.e., chamber of

commerce, industrial associations) commitment to the project. In the same way, RIO complained

that some of the partners were pulling back from projects to which they had promised full

support in the early stages because they did not feel sure about their feasibility.

Lack of initiative. Partners also lamented a generalized lack of initiative about collaborative

courses of action. For instance, the University did not communicate the time frames during

which researchers were available to start working with the other partners, and these other

partners did not make specific proposals for cross-sector projects, as initially agreed.

Interestingly, in lamenting the lack of initiative, neither partner could come up with a fix. As

exemplified in the following excerpt, most partners admitted that negotiating goals across

organizational boundaries had turned out to be much more difficult than foreseen in the initial

stages of the partnership and that the difficulties encountered had weakened partners' initiatives:

> *"I don't want to blame anybody, but I see the manager in (name of Industrial Association 1) have*
> *serious difficulties in connecting our research offer with demands from private companies. He's not a*
> *researcher to know where a technology can land on the market (...) however, he goes to companies to*
> *explain technologies he has no understanding of whatsoever (...) Day by day we are learning that*
> *intermediation is hard, more than expected." (Director of University Department- interview)*

Swift interorganizational identity threat: the collaborative space is not alive.

As partners struggled to implement the collaboration plan, their identity came under siege.

The collaboration difficulties emphasized above were visible in the material artifacts of the

science park. Such a situation contrasted with the reified identity of the partnership, which was

not only 'visible, tangible and there to last' but also 'difficult to dismantle' as explained by the

legal advisor of the Municipality during a BoD meeting. Specifically, partners lamented that the

status quo of the science park challenged the three pillars of the partnership identity, as follows.

Commitment to regional solidarity contrasts with delay in materializing infrastructural

connections. We identified a misalignment between the delayed, under-implemented

collaboration projects and the partnerships' emphasis on regional solidarity. Since infrastructural

projects were lagging and the plan of an integrated communication campaign for the area's

strategic interconnections had been set aside, partners felt that their commitment to regional

solidarity was 'out of place' or 'light years away' with respect to where they intended to be. For

instance, during a collective address, the legal councilor of the Municipality asked the BoD

"Why, if the partnership is so strong, partners have such a hard time putting it into practice?"

Similarly, the innovation manager of industrial association 1 explained that by undermining

concrete manifestations of economic solidarity, the partnership itself risked being undermined:

"We studied the potential implications of higher interconnectedness in our region; this is a great
opportunity for us that goes beyond our city and intersects other nodes on the high-speed rail track (...)
As promoters, we should be creating the facilities, give people the chance to come to the science park
when they want, arrive from the train station, park easily, and we need to get the park going, start
building and interconnecting innovation services, but the problem is we haven't done this yet! (...) this is
a great challenge for us, it speaks for who we are, we can't just talk about economic solidarity and be
light years away from making interconnection happen." (Innovation Manager, Ind. Ass.1-interview)

Win-win cooperative mentality contrasts with small fragmented space. After the

inauguration, partners started noticing that the space was too small, and that lack of space risked

fragmenting single partners' activities, while also complicating coordination between partners.

For example, despite the initial agreements, the industrial associations did not occupy the co-

working desks in the open space and blamed RIO for not having organized an adequate rotation

plan for such a small, fragmented space. Additionally, both the head of the private research lab

and the heads of the University labs lamented that the space assigned to them in the science park

was insufficient to transfer the groups' entire staff and equipment, and that 'in order to stay next

to each other, they had to leave pieces of their own staff and equipment behind' (Head of Private

Research Lab). This trade-off was also seen as an identity threat because it risked turning the

partnership's win-win cooperative philosophy into an irrational, even 'schizophrenic' enterprise:

"It's schizophrenic that we must be in two places at the same time. Do I move part of the equipment
there (in the science park) and leave part of it here (in the University campus)? And when I need to use
both? What about the guys, how do I tell three of them to stay here while other five move to the science
park? No, really, everybody blames us because we have not moved there yet, but is it any wonder? Not
enough space is serious issue (...) I think this project was a mistake (...) in terms of cooperative
mentality. It would have made sense to have all the University, all the research labs moving there, not just

my lab, (researcher name)'s lab and (researcher name)'s lab, not to mention [moving just] half of our labs." (Head of University research lab, interview)

   Innovation from tradition contrasts with empty space. We also found that three years after the inauguration, over 70% of the space in the park was still uninhabited. Consequently, partners lamented that the science park risked becoming a wasted opportunity, going from 'a live bridge between past and present' to a 'failed real estate investment'. For instance, the Municipality's urban planning director feared that instead of an urban creative lab, the science park risked turning into a mere partnership showroom, "an empty box with a big red ribbon on top" (Director of Private Research Lab) and a "locus of too many dreams that would have probably never come true" (RIO CEO). For other excerpts see also table 2.

Stage 4: Tentative realignment

Starting in 2014, partners began exploring the possibility of expanding the space of the science park by restructuring other adjacent abandoned industrial buildings, and a joint venture between the Municipality and PUC was created for this purpose. With the expansion project, partners aimed at giving life to a multiplex park to realign identity claims and collaboration practices.

Revisiting strategic plan: Buying time to align projects

   In the 2014-2015 interval, we participated in seven BoD meetings that discussed the evolution of the science park project and reaffirmed obstacles to collaboration (see previous section). Given the high number of conflicts and contradictions they faced during the implementation stage, partners adopted the strategy of buying time for themselves and partners to carry forward the partnership despite unsolved problems. Accordingly, all our informants expressed the need for more time to resolve incomprehension related to project delays, to negotiate how much they wanted to invest in the partnership, to decide which strategic projects

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they were able to pursue and to establish the staff and facilities to be transferred to the science

park. Partners referred to the materialization of the multiplex park by the end of 2019 as a

necessary time horizon for revising and implementing their collaboration projects. According to

our informants' explanation, looking up to a new project (the 'multiplex') rather than focusing

on the science park allowed partners to stay together, without having to face conflicts that could

potentially trigger partnership failure. To give an example, BoD meetings were often animated

by contrasting opinions on whether partners should publicly admit their inability to implement

the collaboration plan. Throughout seven BoD meetings where the point was argued, an average

of 9 out of 12 members expressed a preference for buying time to ensure realignment. The

following conversation between partners in one of the BoD meetings exemplifies the typical

dynamics of the buying time strategy:

> Regional Innovation Office Advisor: "*We keep on saying we are strong together but if we look at the books this doesn't really show. I don't need to say it out loud (…) you know it better than me, the risk of bankruptcy is in the air*"
> Municipality Legal Advisor: *"Yes but I think we must not let ourselves carried away by fear. Our project is important and it's here to stay. We need time to make this work, guys, we can't build Rome in a day, it's like that and you know it. We have not been perfect, I am the first to admit it. But our mission isn't easy either".*
> President of Regional Innovation Office: *"We have a great vision for a wonderful area and a big responsibility. I agree with (name of Municipality Legal Advisor), we need time to build this machinery, but as I always remind my colleagues from (name of partnering organizations), we also need the right tools to do it. We need money and the right context (…) The expansion of the science park is an opportunity that we don't want to miss." (BoD meeting)*

Interorganizational identity re-elaboration. Revisiting identity pillars 1 & 2 by

decoupling them from existing space and projecting them into a future space

As they struggled to implement the collaboration plan, partners also clearly expressed the

need to avoid partnership failure. Accordingly, despite increasing conflicts, informants continued

to think about themselves as a strong partnership whose goals had to be carried forward at all

costs. As exemplified by the words of the general manager of industrial association 2, a

frequently mentioned challenge was to act like 'a cohesive group of people' that had to 'find

their way out of a collective impasse'. The concreteness of the science park was perceived by

partners as a perpetual reminder of the need to preserve the pillars of the partnership:

> *"The park is there, and it speaks for us, it reminds us about what we stand for (...) it is also our*
> *unique chance to make things happen, for the best of our region and for our sake." (President Ind.*
> *Ass1 -BoD meeting)*

We found that as partners bought time to implement the strategic plan, they also started

revisiting the first pillar of the swift identity they had created. This occurred by dissociating the

identity claims from the problematic space of the science park and inscribing them into the future

space of the innovation multiplex, as follows.

From commitment to regional solidarity to targeted (business-oriented) regional

commitment. As they planned for the new innovation multiplex, partners discussed the

opportunity to adopt a more targeted form of regional commitment that no longer looked at

regional solidarity in general but focused more specifically on business opportunity

development. The underlying belief was that a more targeted business approach to the region

(i.e., focusing on the excellence of private firms in the region) could make the partnership

stronger and more distinguishable. To this purpose, partners decided to give precedence to

inviting private firms inside the multiplex. For instance, industrial associations took an active

role in advertising and proposing space acquisition to their members. This way, the first pillar of

the identity was no longer connected to the destiny of the existing science park but rather to the

fortunes of a space that still needed to be brought to life. The following excerpt from an

interview with the President of the Municipality-PUC Joint Venture exemplifies this movement:

> *"This brings us to what we always knew deep inside. We are an industry-oriented partnership. I mean, it's not that social welfare and preschool education don't count, but our partnership breathes and spreads around the aura of the industrial excellence that is the heart of this region (...) the science park is a good idea but we always knew that it was a difficult, almost impossible, enterprise, there's just too much to connect, European labs, researchers, and start-ups, it's just too much meat of the grill, you know what I mean? With the multiplex things are different, it's a different project. It's a brand-new start for us, and we don't go in falling off the clouds, we go in knowing who we are as a partnership, and what we stand for (...) We need best-in-class businesses representing us in there, this is something we all agree upon." (President Municipality-PUC Joint Venture- interview).*

From win-win cooperative mentality to intermediated approach. In a similar way, partners

decided during BoD meetings that the cooperative win-win mentality was causing too much

heterogeneity inside the partnership in terms of different requirements, priorities, and willingness

to invest. Accordingly, the open-ended, spontaneous approach to cooperation slowed down the

partnership and introduced ambiguity about the best available path. As a consequence, partners

agreed that the partnership should be defined by a more structured approach that relied less on

spontaneous interactions and more on intermediation. Partners thus decided to restructure RIO's

role as innovation catalyzer in the science park and to transform it into a broker role for

structured business relations in the future multiplex. The following excerpt from an internal BoD

document shows the same dynamic by which a revisited identity claim is first de-coupled from

the existing space into which it was reified and then recoupled to a new, more suitable space

(new round of reification).

> *"The role of RIO should become more specific, and respond to specific requests, and not to generic needs of technological transfer (...) This would allow RIO to embody in the future multiplex the very identity of the partnership, that of structured intermediation with potential large-scale impact." (Internal Report- BoD approval of RIO reorganization plan)*

It is noteworthy that at the time we began to discontinue our presence in the field, the

partnership was still going through significant changes. Not only has the innovation multiplex

not yet materialized, but partners are still buying time to find ways to remove collaboration

obstacles. In the same way, identity claims are still in progress, and recent signs have shown that

also the third identity pillar might undergo changes. Only time will tell whether the new

multiplex will solve collaboration problems and consolidate the identity, or whether new rounds

of threats and reifications will be necessary to achieve stable identity-collaboration realignment.

Summary of grounded model

We described a grounded model that emphasized the interplay of interorganizational identity

formation and collaboration practices in strategic interorganizational partnerships. The interplay

evolved in a non-linear manner, along four different stages: anticipated alignment, locked-in

anticipated alignment, emergent misalignment and tentative realignment. Figure 2 that we

anticipated at the beginning of the findings section not only entails a synthesis of the main

categories of the grounded model but also systematizes the driving forces that move the identity-

collaboration process forward. We showed that the first stage of anticipated alignment was

triggered by the boundary conditions of the partnership: simultaneous heterogeneity challenges

and integration imperatives. Specifically, partners fought against heterogeneity challenges (i.e.,

perceptions of multiple and divergent strategic gaps) at the partnership level by signing an

innovation agreement to pursue the integration imperative, on the one hand, and by developing a

'swift' interorganizational identity based on three well-defined pillars, on the other hand. Efforts

to shape the partnership as a written agreement forced collaboration goals and identity claims

into being, causing an anticipated alignment between the two. We highlighted that the identity

was 'swift' and the alignment was 'anticipated' because they developed as a prompt reaction to

partnership heterogeneity challenges and integration imperatives but without dealing with these

conditions *per se*. We emphasized that partners' attempts to stabilize and strengthen the

precarious alignment obtained in the first stage pushed them towards a new stage characterized

by a locked-in alignment. By planning and/or building material artifacts related to the science

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park, partners gave further shape to their collaboration strategy and further consolidated (i.e., reified) the three pillars of their identity, obtaining thus a 'lock-in' effect. However, we also showed that the anticipated lock-in triggered different evolution patterns in collaboration practices and reified identity, which in turn brought emergent misalignment. While the realization of the material artifacts led to an increasingly strong partnership identity with reified pillars, on the one hand, the day-to-day use of those very material artifacts unraveled a precarious collaboration plan that failed to take off, on the other. Since the asynchronous evolution of identity and collaboration practices threatened partners' accomplishments from previous stages, attempts to synchronize reified identity and collaboration practices were made, pushing the partnership towards a stage of tentative realignment. This last stage testifies once more to the key role of reification, this time in the transition from a swift to a reelaborated interorganizational identity. Specifically, while partners bought additional time for learning how to collaborate, two of the three pillars of the partnership identity were decoupled from pre-existing material artifacts, revised and recoupled with new artifacts.

Discussion

In the following, we discuss our contributions to the literature on identity formation and the debate in IOR process literature on the evolution of interorganizational partnerships (see also Table 3 for a synthesis). Importantly, our findings bring about an unexpected contribution on the role of materiality both in identity formation and in the interplay between identity formation and collaboration dynamics in IORs, thus providing a bridge between the two.

Table 3: Summary of theoretical contributions

Concepts	Past literature	Insights from our study
Mechanisms of identity formation	Formation starts with ill-defined identity attributes and proceeds towards better-defined versions (through joint experiences and negotiations); occasional crises are due to differences and lack of convergence on a common definition of identity (Gioia et al., 2010; Hardy et al., 2005; Patvardhan et al., 2015).	Identity formation may precede the ability to collaborate; 'Swift' identity (early, well-defined, clearly stated, and rarely contested) identity acts as a collaboration accelerator; allows individuals to cope with heterogeneity challenges and simultaneous integration imperatives Materiality -i.e., associating identity attributes with material artifacts- plays a key role in the creation of swift identities. It also determines path dependence -i.e., individuals interpret swift identity change/reelaboration as a material event that manifests through the need to 'couple' and 'decouple' attributes and material artifacts. Identity crises are related to a-synchronous evolution of identity and collaboration processes.
	Borrowing from superordinate and subordinate identity claims (Lamertz et al., 2005; Navis and Glynn, 2010; Patvardhan et al., 2015; Zamparini and Lurati, 2017).	Blending super- and subordinate identity claims is accomplished through strategies of similarity and/or complementarity. The process constitutes the departure point for the formation of swift identity.
Interplay of identity formation & collaboration practices in IORs	Three contrasting, disconnected perspectives: small wins, dysfunctional rigidity, and non-linearity.	Bridge the three perspectives and connect IOR and identity literatures: interorganizational identity formation in IORs is both a mobilizing force and a source of potential rigidity for collaboration practices, which can be overcome through reelaboration attempts.
	1) small wins (do not study explicitly identity but IOR processes at large): virtuous circle of effortful collaboration that leads to gradual identity formation (Beck and Plowman, 2013; Bryson et al., 2006; Ring and Van de Ven, 1994; Vangen and Huxham, 2003).	1) swift identity vs small wins: in partnerships that experience heterogeneity challenges and integration imperatives the interplay between collaboration and identity may be anticipated instead of gradual and in crescendo; identity formation may precede the ability to collaborate, swift identity acting as a collaboration accelerator.
	2) dysfunctional rigidity (studies on trust and belongingness in IOR): belongingness makes collaboration practices rigid, and thus dysfunctional to IOR's need for permanent flexibility and constant change (Gargiulo and Ertug, 2006; Huemer, 2004; Huxham and Vangen, 2013; Marion et al., 2014; Thorgren and Wincent, 2011).	2)'identity reification' vs. dysfunctional rigidity: reification is a strategy of stabilization of swift identity; attempts to move things forward can temporarily cause dysfunctional rigidity (lock-in of anticipated alignment); However, when dysfunctions occur, attempts to synchronize collaboration and swift identity are likely to occur (through strategies such as de-reification, re-reification).

Mechanisms and perspectives on identity formation

Expanding identity formation process theorization, we argue that interorganizational identity

formation can be seen as an instance of collective identity formation in contexts characterized by

a unique mix of high heterogeneity challenges (i.e., diversity concerning mutual understandings

about a group's core goals and attributes), on the one hand, and the constant need to consider

integration imperatives, on the other hand. Our insights into the processes of swift identity and

swift identity reification provide an alternative view on how an identity formation process begins

in such situations. Contrary to existing evidence of a gradual process of identity formation by

which actors build an ill-defined identity and proceed towards revised and improved versions

thanks to joint experiences and moments of negotiation (Gioia et al., 2010; Hardy et al., 2005;

Patvardhan et al., 2015), we bring evidence of an opposite process. Aspirations for integration,

on the one hand, and fear of potentially disaggregating forces (i.e., heterogeneity threats), on the

other, may trigger urgency in creating common ground well before opportunities have been

weighed and potential sources of conflict have been dealt with. For instance, a partner may

choose to fight against destabilizing factors by symbolically projecting and enacting an identity

as a strong, unitary actor and may be tempted to affirm this identity in the external environment

even before they themselves are fully aware of the new identity's attributes.

Concerning the position of interorganizational identity formation with respect to the more

consolidated processes of organizational and collective identity formation, we support previous

findings that a new collective identity hardly ever develops from scratch and confirm the pattern

by which new identities emerge out of the bricolage of superordinate (industries, social

movements, and institutional fields) and subordinate (i.e., organizational) identities, which has

been previously found at the level of nested collective identities (Navis & Glynn, 2010;

Patvardhan et al., 2015; Wry et al., 2011; Zamparini and Lurati, 2017) but also at the

interorganizational level (Beech and Huxham, 2003; Ellis and Ybema, 2010). In addition, our

study complements previous research by also specifying *how* the bricolage of super- and

subordinate identity claims occurs. Specifically, we document that partners combine elements

from their regional identity with heterogeneous elements from their organizational identities by

using strategies of similarity and complementarity. Our evidence suggests that the process by

which partners render their identity attributes as similar or complementary to those of other

organizations implies a high level of sophistication that has not been investigated so far,

including a fair understanding of other partners' identities as well as a set of inductive processes

about how multi-level identities may relate to each other. While these processes will benefit from

additional research, our study highlights the conditions in which these mechanisms unfold.

Specifically, we argue that the drive to consider both heterogeneity challenges and integration

imperatives functions as a catalytic force in the process of identity bricolage. The need to set up

swift identities, then, facilitates individuals' ability to compare their super- and subordinate

identities through relations of similarity and complementarity.

The role of materiality in identity formation

We contribute to the extremely limited research on the role of materiality in identity formation

and, particularly, the role of materiality in dealing simultaneously with heterogeneity challenges

and integration imperatives. Previous identity studies such as the work of Brown and Humphreys

(2006) explain how social narratives of a common space favor the co-creation of highly

contested and incoherent new organizational identities. In the same way, Gioia and colleagues

(2010) describe a new building (i.e., a new school unit) as the container for an initially ill-

defined identity that was subsequently refined through collaboration practices. Differently from

previous studies, we show that the constituting role of the material artifact itself – rather than the

discursive or collaborative practices attached to it – silences differences and triggers temporary

agreement. Importantly, our study emphasizes the key role played by material artifacts in identity

reification. Material configurations such as infrastructure projects, building renderings and

physical space layouts serve the purpose of 'closing' multiple identity possibilities and help

clarify the contents of the identity early in the process. Figure 2 shows how attempts to stabilize

early accomplishments in the partnership (a clear-cut identity and a written collaboration

agreement) were performed by association with material artifacts, which brought along a more

stable lock-in phase. We thus argue that to understand shifts in identity formation, it is

paramount to investigate the process by which flexible collective values, plans, and desires

transform into obdurate material artifacts and how these material artifacts, in turn, allow

collectives to change (Gieryn, 2000, 2002). From a socio-material standpoint (Denis et al., 2011;

Nicolini et al., 2012; Orlikowski, 2006), the design of artifacts allows individuals to unleash their

imagination about what an artifact might do for them once realized, turning the process into an

identity accelerator (Lefebvre and Nicholson-Smith, 1991; Gieryn, 2000). Yet, as the artifact

materializes, the identity loses some of its initial malleability, becoming 'black-boxed' (Gyerin,

2002; Star and Griesemer, 1989). Material artifacts can thus trigger the emergence of different

evolution patterns in reified identity (accelerated development) and in collaboration practices

(acknowledged obstacles), causing threatening situations of misalignment.

We have also shown that reconfiguration of a reified identity can occur both discursively

and materially – i.e., by leveraging material artifacts and/or their meanings. Interestingly,

however, we also reveal that identity reification seems to introduce a sort of 'path dependence':

even when reification proves to be inefficient (i.e., introduces breakdowns), actors may decide to

engage in new rounds of reification to make identity changes still look 'real' (in our case, as soon

as partners decided to disassociate their identity from the science park they re-associated it with a

new space!). In line with Harquail and King (2010), we thus call for a more embodied,

physically experienced view of what individuals consider central, distinctive, and enduring about

their collective.

The interplay of identity and collaboration in IORs: disentangling the debate,

acknowledging the bridging role of materiality

Our study contributes to the debate concerning the role of identity formation in the evolution of

IOR collaboration processes. Going beyond current positions, we propose a less linear approach

to interorganizational identity formation as well as a less linear identity-collaboration interplay.

Concerning the debate about the affording (i.e., small wins) versus constraining (i.e.,

dysfunctional rigidity) versus unpredictable (i.e., heterogeneity-driven instability) role of identity

formation in the evolution of IORs, our study testifies to identity formation as both a mobilizing

force, especially in the earliest episodes in the life of a partnership, and as a source of inertia,

once stabilized through reification processes. However, differently from the small-wins

perspective, we did not find evidence of a gradual and linear pattern of identity-collaboration

interplay based on small amounts of identity-collaboration reciprocal change. Instead, our

findings show that, through swift identity, a strong mobilization may occur immediately, long

before potential conflicts and heterogeneity challenges are dealt with and relational trust is set

up. Swift identity creation can thus anticipate relational trust by motivating partners to start

collaborating right away and to leave behind the circumspection documented in the small wins

approach (Bryson et al., 2006; Huxham and Vangen, 2013; Vangen and Huxham, 2003).

Like the dysfunctional rigidity perspective, we demonstrate partners' strong need to achieve

simple, clearly-defined and easy to follow outcomes, both in terms of identity and in terms of

collaboration. From this standpoint, using material artifacts to create anticipated lock-ins

constitutes a simplifying mechanism (i.e., heuristic) that partners can use to navigate the

partnership conditions more easily, as they deal simultaneously with heterogeneity challenges

and integration imperatives. However, association with materiality also increases the risk of

introducing a rigid interaction scheme in the partnership because, when reification occurs,

partners' ability to actively interfere with identity or collaboration claims decreases. Specifically,

if partners feel the need to start their collaboration strongly but fail to realize that their abilities to

collaborate are not keeping pace as their identity becomes stronger, they may feel stuck (i.e.,

locked) in between what they aspire to be and what they are actually able to accomplish together.

However, we also submit that the rigidities triggered by reification are not always as

constraining as advocated by the dysfunctional rigidity approach. On the contrary, not only can

rigidities have a functional role in the beginning of a partnership lifecycle – i.e., quieting sources

of heterogeneity encourages mobilization in the partnership and gives space to integration

imperatives – but they can also be dismantled later on, once the first crises and misalignments

occur, and turned into reelaboration opportunities. According to Vlaar and colleagues (2006,

2007), the initial phases of a collaboration are naturally filled with anticipations which will be

confronted by reality sooner or later (see also Bryson et al., 2006; Clegg et al., 2002; Denis et al.,

2001). When confrontation occurs, the initial enthusiasm may turn into conflict, disappointment

or, as our case suggests, into temporary misalignment with collaboration practices. Such

dynamics can 'unblock' the partnership and encourage the search for realignments, thus marking

the transition from a partnership's adolescence to more mature schemes of interaction.

In relation to the third perspective, i.e., the unpredictable role of identity processes in how a

partnership evolves, we confirm the previous studies' arguments about multiphase identity

formation. However, instead of an unstable oscillation between differentiation and integration

needs (Beech and Huxham, 2003; Ellis and Ybema, 2010; Hardy et al., 2005; Patvardhan et al.,

2015), we document a progressive pattern of identity formation through which achievements at

one stage are not lost at the following stages, despite the documented back-and-forths. This

finding suggests that reification is a heuristic that helps individuals *synthetize* heterogeneity

challenges and integration imperatives, instead of perennially oscillating between them.

Last, we suggest that materiality plays an important role in understanding how identity

formation and collaboration interact in IORs, thus providing a useful bridge between the identity

formation and the IOR literatures. Our contribution suggests that the use of materiality for both

identity formation and collaboration practices aims at simplifying and stabilizing the

collaboration challenges of a newly formed collective, at least momentarily, and plays a

paramount role in orienting the trajectory of IORs. We relate to the important study of Denis et

al. (2011) concerning the dialectic between heterogeneity and reification in interorganizational

collaborations. According to the authors, material artifacts, such as written documents and

realized buildings are used in partnerships marked by high degrees of strategic heterogeneity and

ambiguity to maintain a delicate equilibrium between doing and avoiding doing things together,

thus creating a strong collective while maintaining autonomy (see also Denis et al., 2007). Our

study partially confirms these dynamics as materiality plays a pivotal role in affording the

transitions between mobilization and stabilization, in terms of both identity formation processes

and collaboration processes. However, we point to a different process of punctuation in which

identity reification initially reduces perceived heterogeneity. Subsequently, heterogeneity

challenges resurface as do ambiguities at the partnership level, causing a misalignment crisis and

forcing partners to revisit the existing reification and propose new reification strategies.

Limitations and future research directions

This work, of course, has limitations. The uniqueness of our case study does not allow for
generalization. Rather, it invites additional studies to understand if and how the processes
described apply in other interorganizational contexts. More needs to be understood about the
boundary conditions of the interplay identified in this study. We have chosen an extreme case of
a highly heterogeneous partnership but recognize that in less diverse collaborations (i.e., strategic
alliances between companies operating in the same sector, either private, public or no-profits),
the dynamics of identity formation may be different. However, it is difficult to say whether a
smaller number of homogeneous participants may demonstrate more or less urgency in achieving
initial alignment (see also Denis et al., 1996). It is also important to acknowledge that in
heterogeneous partnerships, partners may contribute differently to identity formation, employing
differentiated strategies (see Zamparini and Lurati, 2017), and types of artifacts (signed
agreements, conventions, products, etc.). Importantly, we invite researchers to further investigate
the dynamics that lead to early crises in identity formation (see also Gioia et al., 2010;
Patvardhan et al., 2015). Relatedly, since our study contradicts many of the previous findings
emphasizing the instability of interorganizational identities (Beech and Huxham, 2003; Hardy et
al., 2005; Huemer, 2004, Ellis and Ybema, 2010; Patvardhan et al., 2015; Zhang and Huxham,
2009), additional research is necessary to understand the differences between situations in which
material artifacts promote conflicts and instability and alternate situations in which they secure
and stabilize identity claims.

Implications for practice

This research has several implications for organizations that decide to engage in interorganizational collaborations, and especially for those that engage in multi-party multi-sector partnerships. First, organizations should pay attention to the traps of anticipated collaboration-identity alignments caused by a pressing need to overcome differences and start acting towards a common goal. A swift identity can be a useful tool for mitigating different goals and objectives in the partnership, and material artifacts such as collective contracts, logos, spaces or physical objects can help managers clarify and exemplify what they want to become as a partnership. However, such early attempts can introduce rigidities in partners' ability to get to know each other as the collaboration progresses. Thus, suspending the discussion of differences early on may have a boomerang effect later. Also, when collaboration is full of obstacles and takes time to develop, managers should consider the most appropriate tools for identity-collaboration realignment. While some may feel tempted to avoid emergent issues in the name of the newly formed identity or may try to accommodate them in the existing frame, others may try to actively collaborate towards a commonly agreed solution, settle for any compromise allowing the partnership to move on, or even decide to fully dissociate from the partnership (Thorgren and Wincent 2011). While there is no one best way to manage misalignments and realignments in complex IORs, a careful evaluation of the situation should take into consideration the nature of the threat, and, simultaneously, the grounds of the collaboration plan and of the newly formed identity. Only in light of these factors can partners decide whether their courses of action are worthy of being carried forward.

Short Bios:

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Elisa Mattarelli is Associate Professor of Management at the University of Modena and Reggio Emilia (Italy). She was a visiting scholar at the University of Arizona and a Fulbright visiting professor at Stanford University. Her research interests include team dynamics, identity processes, and collaborative technology use, with a focus on distributed and knowledge intensive organizational contexts.

Francesca Bellesia is a doctoral student of Management at the University of Bologna. She has been visiting scholar at Stanford University between September 2018 and February 2019. She is interested in new forms of work that entail knowledge intensive and technology supported collaboration. Her PhD dissertation focuses on crowdsourcing dynamics and gig workers' professional identity formation in technology intensive environments. Her research also investigates inter-organizational collaboration dynamics.

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Appendix:

Appendix: Timeline

Date	Significant partnership events	Data sources
STAGE 1: PRECOCIOUS ALIGNMENT		
March 2nd 2009	Municipality manifests interest in developing a collaborative innovation strategy Municipality manifesting interest to collaborate with other stakeholders of the territory and starting discussion with the main regional institutions on a regional, strategic, innovation project.	archival data (press articles)
Sept. 15th 2009	Regional Solidarity Requalification Conference Regional conference in which several regional stakeholders discussed the need for an integrated and solidary approach to the territory.	archival data (internal documents)
Dec. 9th 2010	Innovation Agreement RIO and partners sign the Innovation Agreement promising collaboration to support regional innovation.	archival data (internal documents) semi-structured interviews
March 2011	Round tables on regional development programs Organizations discussing on the main regional excellences and historical values to be promoted in an international context.	ethnographic observation & interviews
STAGE 2: LOCK-IN OF PRECOCIOUS ALIGNMENT		
June 21th 2011	REO-Municipality agreement about the future science park Municipality and REO agree to the requalification of the northern part of the city as science park.	archival data (press articles)
July 2011	Project design event: connecting the park with strategic urban areas Municipality manifesting willingness to collaborate with the other partners to integrate the park with the other strategic areas of the city (e.g. the university campus, the international centre for education, the station, the city centre, the hospital) through infrastructures and other specific projects (interactive multi-site map, multi-location events, cross-disseminating locations)	Archival data (press articles, internal and public documents), semi-structured interviews
June 30th 2011	Seminars for presenting the project (i) First of a series of seminars in which partners discuss the project and receive feedback from international exponents (discussions about conservation strategy, decisions about ex buildings covered in graffiti)	archival data (press articles) observation
Dec. 20th	Seminars for presenting the project (ii)	archival data (press articles)

2011	Second of a series of seminars in which partners discuss the project and receive feedback from international exponents (discussions about the organization of the internal space of the future science park)	observation
Jan. 2012	Beginning of requalification work (building the science park) Under Municipality supervision, and upon the architect team's indication, the restauration work begins	archival data (press articles)
April 5th 2012	Seminars for presenting the project (iii) Third of a series of seminars in which partners discuss the project and receive feedback from international exponents (continued discussions about the organization of the internal space of the future science park).	archival data (press articles)
Sept. 2012	Interior setup meeting Architects ask partners to provide information about assigned space and specific space requirements.	archival data (internal documents), interviews
June 2013	Manifestation of commitment to the project Organizations publicly manifest their commitment to the park's initiatives on press.	archival data (press articles)
Oct. 26th 2013	Science park inauguration Municipality evocation of the project as an exportable model for innovation.	archival data (press articles), interviews
Oct. 27th 2013	Techno-month events Series of events to promote the new science park.	archival data (internal documents)

STAGE 3: EMERGENT MISALIGNMENT

Dec. 2013	Update meeting about partners' commitment to transfer into the co-working space Organizations manifesting perplexities and renewing willingness to populate the co-working space and share space with other partners.	semi-structured interviews, observations
Dec. 2nd 2013	Talks of potential requalification for the whole area PUC starts lobbying in view of a funding campaign to restructure adjacent industrial buildings in the area.	archival data (internal documents), semi-structured interviews
Dec. 19th 2013	First research lab settlement The private research lab settles in the science park.	semi-structured interviews, observations
Mar. Apr. Oct. Nov. Dec. 2014	6 BoD meetings regarding project implementation obstacles Partners lament the lack of commitment of other partners in completing the project (empty space, small fragmented space, delay in materializing infrastructures and strategic area interconnection	semi-structured interviews, observations

	projects -interactive multi-site map, multi-location events, cross-disseminating locations)	
March 17th 2014	Joint Venture between Municipality & Public Utility Company Creation of a new-co and agreement to restructure the entire industrial area	archival data (internal documents), semi-structured interviews
STAGE 4: EMERGENT REALIGNMENT		
Dec. 10th 2014	Preparations for international trade fair Commitment to new joint projects to re-launch the space inside the science park on the fair occasion (planning for an innovation museum, interactive multi-site map, visitor shuttle)	semi-structured interviews observations
Feb. 1st 2015	University research labs partial settlement University research groups transfer part of equipment and appoint staff to sporadically work on site.	observations
Apr. 2015	RIO's innovation office transfer to the science park The innovation office of RIO settles in the science park.	observations, semi-structured interviews
Sept. 2015	Decision to prioritize private companies in purchasing new space in the Multiplex	observations, semi-structured interviews
Sept. 10th 2015	Presentation of a Multiplex Park Architectural Project and manifestations of interest Municipality presents the project and organizations interested in buying space in the new areas.	archival data (internal documents, public (i.e., website) documents, observation
Jan. Mar. Jun. 2016	3 BoD strategic meetings regarding project implementation obstacles Partners lament the lack of commitment of other partners in completing the project and decide to continue sustaining the partnership provided the reorganization of RIO; Proposals for reorganization of RIO; discussion of RIO's role in the Multiplex	observations