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Three Essays on Network Failure, Coordination and Cooperation

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Introduction

Organizational and sociological research have dedicated significant attention to understanding what fosters and sustains network forms of governance. Networks are pervasive in social life, and thus the investigation of their evolutionary dynamics, as well as coordination and cooperation mechanisms at the bases of their functioning, have attracted a lot of interest.

Research in this field still presents some gaps, notwithstanding the substantial development of theories of network governance in the last decades, from Powell's (1990) seminal call for a "new conceptual toolkit" to study network forms as akin to markets and hierarchies -and not as a mere hybrid.

The traditional approach, in fact, interprets networks mainly as structures of ties and nodes, studying the interacting elements as unitary actors. Research about inter-organizational networks inherited this point of view, thus somehow disregarding March's (1962) interpretation of organizations as conflict systems. The simple but powerful idea of March (1962) is that the composition of firms is *negotiated*, and their goals are not given but *bargained*, and for this reasons the executives take the role of *political brokers*. In an inter-organizational setting, these become key-issues for what concerns networks' evolutionary dynamics, to the extent that politics within and across organizations affects patterns of development of the larger system (Whitford and Zirpoli, 2009; Kaplan, 2008).

The analysis of political considerations in the study of network forms of governance is still underdeveloped, and it needs to find an integration with the more traditional approaches to the research on network advantages as well as on its problems and dysfunctionalities. The investigation of what makes networks function traditionally resorts to those mechanisms widely acknowledged by the literature: from trust (Helper et al., 2000; Larson, 1992; Uzzi, 1997), to reputation and reciprocity (Kogut, 1989; Powell, 1990; Axelrod, 1984), information transfer and learning (Larson, 1992), joint problem-solving arrangements, and reciprocal lines of communication (Powell, 1990; Smith-Doerr and Powell, 2005; Uzzi, 1997). A revision of these established conclusions in light of politics could shed further light on the patterns of development of inter-organizational networks.

This dissertation endeavors to contribute to the literature on network governance bridging different existing sociological and organizational theories, in order to deepen the understanding of network coordination and cooperation problems. Specifically, the focus is on how

political considerations can give precious insights to the study of networks development, and how coalitions formed within and across organizational boundaries can affect the evolution of cooperation.

The first chapter introduces the investigation of a network that failed to emerge in the city of Venice between the Venice Film Festival and the local Hospitality System. Based on survey-data, this chapter aims at investigating how different stakeholders of a tourism destination can contribute to foster collaborative strategies between local organizations belonging to the fields of culture and tourism. Drawing both from traditional theories of network governance and tourism management research, this work starts from the analysis of *coordination mechanisms* proposed by network theory, which identifies two preconditions for cooperative relationships: competence and trust. We test the hypotheses that, if trust and competence characterize the relationships between local stakeholders, collaborative strategies will be likely to emerge. Our findings show how, in our case study, difficulties for the emergence of cooperation and for the development of a network form of governance can be traced back to the weak role of hotels category associations, which do not play effectively the role of mediators.

The second chapter explores more in-depth the causes of the failed network between the Venice Film Festival and the local Hospitality System, focusing on the investigation of the role of hotels category associations. This work contributes to the theory of network governance investigating *failure dynamics*, drawing on the emergent theory of network failure. In the last decades scholars have paid little attention to network problems and dysfunctionalities, in favor of empirical and theoretical studies on the advantages of this form of governance. With this explorative case study, the present work wants to contribute to this underdeveloped field of research, both providing empirical evidence and some theoretical advances to the network failure research. The traditional approach studying networks as constituted by ties and nodes -namely by interconnected unitary actors- is criticized, and the bridging with theories of politics and social movements is proposed as a necessary step to understand networks evolution and failure paths. The findings highlight the presence of cross-organizational political coalitions supporting different cognitive frames with respect to the cooperation and coordination problem. Hence, the causes of this case of failure are identified with the unsolved framing contest within and across hotels category associations, which results in their inability to mobilize hotels towards a collective interpretation of the potential network form of governance between the Venice Film Festival and the local Hospitality System.

The third chapter proposes a more theoretical exercise aimed at investigating the emergence of coalitions of cooperating agents outside formal organizational boundaries. An agent-based model investigating the dynamics of the evolution of *cooperation* is proposed as a tool for simulations able to reproduce the main considerations of the present work: if trust and reciprocity, as well as other forms of incentive schemes (shadows of the future), cannot always function as means for sustaining cooperation, the recognition of others' similarities in

goals and values can sometimes drive towards coalitions formation even outside the formal organizational boundaries.

This thesis contributes to the investigation of cooperation and coordination problems in inter-organizational settings through the empirical investigation on a unique case study that, given the explorative nature of most of our research questions, was well suited to our studies. However, extending the empirical evidence on failed networks also in other contexts, could give precious insights in the understanding of causes of failure.

We strongly believe that the bridge between sociology and organizational studies is a promising avenue for future research, especially in the necessary connection between the macro- and micro-levels of analysis of organizations' evolutionary patterns. Thus, a future interesting development of this work would be a more extensive investigation on how coalitions and competing cognitive frames do emerge and evolve, both within and across organizational boundaries.

From a methodological point of view, we think that the use of several different methods for the investigation of the same phenomenon gives robustness and interesting intuitions in developing a research work, thus a convergence towards multi-methods studies would be an interesting path of development for the organizational field of research.

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1 Making Tourism Networks Work - The Role of Organizations, Associations, and Local Government

1.1 Abstract

In the last decades, research about tourism management has focused significantly on studies of network governance. But if the strategic relevance and underlying mechanisms of inter-organizational relationships for tourism destinations' competitiveness were addressed by several studies, still little is known about how different actors can contribute to foster collaborative strategies. The tourism destination, for its peculiar production structure characterized by high complementarity and complex interdependencies, can potentially involve a wide variety of firms and organizations in network relationships. Hence, making tourism networks work requires the identification of stakeholders which can actually influence tourism firms' collaborative strategies, and the assessment of their potential roles in fostering inter-organizational relationships. Starting from the analysis of coordination mechanisms proposed by network theory, we identified two preconditions which make cooperative relationships work: competence and trust. Our hypotheses, then, are that these conditions being present between the stakeholders participating at different titles in the relationships, they should work. We test our hypotheses in a specific instance of network in a world-wide famous tourism destination: the city of Venice. We take as an exploratory field of research the "malfunctioning system" of relationships between the local hospitality system and a cultural event of international resonance, the Venice Film Festival, for its complex inter-organizational network. Our main findings can have implications both for private and public policy: the identification of different stakeholders who can influence network's functioning allows to undertake specific interventions in order to increase trust or competence or both, not generally addressed to the whole system, but aimed at solving distinct network's weaknesses.

Keywords: Networks, Complementarities, Stakeholders, Government, Associations, Trust, Competence.

1.2 Introduction

Network forms of organization are acknowledged to be increasingly important in shaping tourism planning and development (Dredge, 2006). Several studies have been dedicated to the description of how inter-organizational relationships and networks are able to contribute to tourism destinations' competitiveness and innovation processes (Wong et al., 2011; Sundbo et al., 2007; Pavlovich, 2003). Networks, in fact, are the form of governance most likely to emerge in those organizational fields (Di Maggio and Powell, 1983) characterized by high levels of uncertainty, in which demand is unstable, knowledge and technologies are rapidly evolving and changing and complex interdependencies among agents are present (McEvily and Marcus, 2005; Williamson, 1985).

The tourism field (that in the literature has differently been defined as tourism destination, local system or district (Novelli et al., 2006; Hjalager, 1999; Capone, 2006)) is an ideal candidate for network form of governance due to the many interdependencies which underlie interactions among tourism organizations: "From its long chain of distribution system to its fragmented supply components, the tourism field is, by its very nature, dependent upon inter-organizational relations to achieve organizational and regional goals" (Selin and Beason, 1991). The presence of complementarities and resource dependencies has been widely acknowledged by scholars of tourism management, who link interdependencies to the relevance of networks for achieving strategic leverage (Pavlovich, 2003).

Approaching tourism organizational fields through network theory provides a useful analytical approach for the analysis of multi-layers interactions which characterize destinations: it is possible to recognize the presence of different networks operating at different scales and over time (Dredge, 2006). Multiple stakeholders, in fact, are involved in management of tourism destinations, and understanding how they interact could be fundamental for assessing inter-organizational relationships evolution. Stakeholders are defined by Freeman (1984) as "any group or individual who can affect, or is affected by, the achievement of a corporation's purpose": thus translated into touristic contexts, stakeholders can be identified with local citizens, interest groups (heritage, cultural, environmental, etc.), local and state governments, categories' associations and businesses in general (Getz, 1989; Stokes, 2008). Plurality of actors suggests that the composition of interests in order to sustain network coordination arrangements is not a trivial question, and that inter-organizational studies cannot ignore the twofold nature of interactions, both cooperative and conflictual.

Networks functionalities and dysfunctionalities, studied by sociologists and organizational scholars, have been investigated in the tourism field (Selin and Beason, 1991; Novelli et al., 2006; Saxena, 2005; Tinsley and Lynch, 2001). But if the strategic relevance and underlying mechanisms of inter-organizational relationships for tourism destinations' competitiveness were addressed by several studies (Dredge, 2006; Pavlovich, 2003), still little is known about how different agents can contribute to foster collaborative strategies. The present paper wants

to contribute to this gap with a case study of a specific instance of network in a world-wide famous tourism destination: the city of Venice. We take as an exploratory field of research the system of relationships between the local hospitality system and a cultural event of international resonance, the Venice Film Festival. With our analysis we want to assess how different stakeholders contribute in fostering collaborative relationships, which are of strategic relevance for the Festival and the destination's competitiveness.

This paper is organized as follows: section 2.3 presents the theoretical framework from which we draw our hypotheses; the research setting is introduced by section 1.4, followed by the presentation of methods, analysis and results in section 1.5; interpretation of our main results is provided by section 1.6, while section 2.8 offers a general discussion of our work, presenting implications of our findings and potential future developments of this research.

1.3 Background theory

1.3.1 Research on Network Governance

Debates in organizational studies have developed significantly around networks. In particular, those debates have been fundamentally marked by Walter Powell's (1990) seminal call for a "new conceptual toolkit" to describe "networks that are neither markets nor hierarchies," but which are somehow more social -that is, more dependent on relationships, mutual interests, and reputation- as well as less guided by a formal structure of authority (Powell, 1990), than either markets or hierarchies.

In defining what a network form of governance is, we follow Podolny and Page (1998) who define it as "any collection of actors ($N > 2$) that pursue repeated, enduring exchange relations with one another and, at the same time, lack a legitimate organizational authority to arbitrate and resolve disputes that may arise during the exchange". This definition, while excluding market and employment relations, includes a wide variety of inter-organizational relationships, such as alliances, consortia, business groups, relational contracts, outsourcing relations. This list of possible expressions of network form is far from completed, but in order to put some boundaries to our definition we can say that networks are those forms of organizations in which social aspects are distinctive.

Powell (1990) suggests how reciprocity principles are somehow at the base of network forms of organizations. Granovetter (1985) also argues that networks build around communities insofar as "trustworthy behavior can be expected, normative standards understood, and opportunism foregone", identifying trust and obligation among members as distinctive features. In this direction goes the quite extensive literature on *embeddedness*, which showed that "embedded relationships have three main components that regulate the expectations and behaviors of exchange partners: trust, fine-grained information transfer, and joint problem-solving arrangements" (Uzzi, 1997).

Performance consequences of social aspects on inter-organizational relationships have been investigated: information accessibility, for example, has been connected by Gulati (1998) to "partnering firms' choice of structure to formalize the alliance, as well as key processes underlying the dynamic evolution of the alliance". From this point of view, social ties allow to have information about competencies and trustworthiness of partners (current and potential), as well as relevant information at the right time, and referrals useful for legitimation processes (Gulati, 1998). Uzzi (1997) provided evidence for the theory with his study of the apparel industry. In his work, he found how "the primary outcome of governance by trust was that it promoted access to privileged and difficult-to-price resources that enhance competitiveness but that are difficult to exchange in arm's-length ties. [...] Fine-grained information transfer benefits networked firms by increasing the breadth and ordering of their behavioral options and the accuracy of their long-run forecasts. [...] Embedded ties entail problem-solving mechanisms that enable actors to coordinate functions and work out problems 'on the fly' " (Uzzi, 1997).

A great emphasis has been put by scholars on sociality of networks as a distinctive character of their performance and functionality. Literature on networks also identify trust and other social considerations as available governance mechanisms, since transactions are based on "relationships, mutual interests, and reputation" and trust may contribute in inhibiting opportunism (Powell, 1990). Coordination mechanisms refer to social norms and informal practices, that may or may not be translated into rules and procedures (Grandori, 1997). Together with trust, the other important aspect which makes networks functioning has been identified with network members' ability to exchange relevant information in order to align firms' strategies and to solve joint problems (Uzzi, 1997; Powell, 1990; Schrank and Whitford, 2011). Inter-organizational relationships, in fact, imply complex transactions, in which members have to bear the risk of being exploited by opportunistic partners: in the absence of competences in managing relationships and trust, network functioning is at risk.

It is important to note that in the last decade the field of network governance has seen low agreement about coordination mechanisms (Zirpoli and Whitford, 2012). The social and embeddedness argument, in fact, is criticized by another school arguing that inter-organizational collaborations can be sustained without trust (Helper et al., 2000). The learning-by-monitoring approach, in fact, traces back the success of networks to the development of organizational and managerial techniques coming from the engineering practice, techniques aimed at increasing transparency and building routines for interaction and problem solving (Gilson et al., 2009). In agreement with this approach, inter-organizational techniques allow to build a kind of "studied trust" (Sabel, 1993) that helps in sustaining cooperative agreements. Another alternative approach in organization studies is that of modularity, which claims that inter-organizational relationships are designed on the basis of the decomposition of products in relative isolated components (modular product design). Thus, network forms of organization are built in function of transactional conditions (Sanchez, 1996), which are

themselves a function of technologies (Zirpoli and Whitford, 2012). In agreement with Zirpoli and Whitford (2012) we think that the three approaches are not concurrent in absolute terms, but that each theory captures a part of the story.

1.3.2 Networks in Tourism Research

Value creation processes in tourism destinations are strongly tied to the interconnection of organizational parts, and depend in important ways on the relations between actors involved. As acknowledged by March and Wilkinson (2009), the quality of the tourism experience offered by a tourism destination is more than the sum of its parts, due to complementarities and complex interdependencies, and for this reason tourism management research is heavily interested in network forms of organization. Tourist destinations, at different levels of geographical consideration, involve several kinds of organizations, institutions and actors that, together, create the value proposition for their tourists. By acknowledging the variety of businesses directly involved in the tourism production system, the literature addressed the need to promote "diagonal integration" (Poon, 1994), through which "the co-location of directly and indirectly tourism-related SMEs add value not only to the network and cluster member experience but also to the tourism experience" (Novelli et al., 2006). Hence, inter-organizational relationships can be considered as a structural precondition to improve value creation processes both on the demand and supply sides.

Given the particular production structure of the tourism field (Selin and Beason, 1991), which involves different kinds of firms and organizations, the social approach to networks' coordination mechanisms has been the most widely used (Wong et al., 2011; Sundbo et al., 2007; Pavlovich, 2003). Trust and personal ties have been recognized as key-assets for tourism destination development trough network organizations (Saxena, 2005; Tinsley and Lynch, 2001). Since firms, belonging both to the same or different business areas, can regard one another as competitors as well as cooperators, issues such as "trust", "ties", and "social capital" become fundamental in tourism networks organizations (Novelli et al., 2006; Inkpen and Tsang, 2005).

The peculiarity of the tourism industry, which potentially includes a variety of stakeholders in a network of relationships, arises the issue of how different players position themselves within the interaction field, influencing the evolution and development of collaborative networks (Jamal and Getz, 1995). Making networks work requires the identification of stakeholders which can actually influence tourism firms' collaborative strategies.

It is important to note that the relevance of tourism networks emerge both at the entrepreneurial level and at the policy level (Bonetti et al., 2006): if the former is common to several industries (and benefits of network governance have been demonstrated by organizational studies), the latter is a peculiarity of fields akin to the tourism one (as, for example, the cultural industries). As presented in the work by Beritelli and Laesser (2011), development

of stakeholders networks is a key issue for policies of strategic development of destinations (Inskeep, 1991; Getz and Jamal, 1994; Ritchie and Crouch, 2003) as well as destination marketing (Heath and Wall, 1992). Local administrators of tourism destinations have significant incentives to pursue coordination and cooperation among local players, since the value created by such forms of organization is recognized to benefit the whole community (Tinsley and Lynch, 2001; March and Wilkinson, 2009; Bonetti et al., 2006). Public government institutions are then considered one of the stakeholders that could play a role in fostering inter-organizational relationships, among those classically identified as key network players: tourism businesses, cultural institutions or organizations managing tourism resources (environment, entertainment, sport, etc.). Among the public government and single firms there are category associations, that are identified as relevant stakeholders in what they can intervene in managing and coordinate relationships both between firms themselves and between these and public institutions (Selin and Beason, 1991).

Hence, summarizing, it is possible to identify three different *types of stakeholders* for the analysis of collaborative strategies' development in a tourism destination: the *firms*, namely those businesses and organizations that interact directly with potential partners and which actually develop collaborations; the *mediators*, as for example the category associations, which manage and coordinate relationships between firms themselves or between firms and institutions; the *policy makers*, identifiable with the local government that is involved in fostering collaborative strategies while pursuing destination's macro-goals, and potentially intervening in an indirect way interacting with both mediators and firms.

From this complex setting, in which networks potentially involve a large variety of organizations that need to coordinate through social mechanisms, arises the interest of this work: understanding how tourism networks can be made functioning by the interplay among different stakeholders. The review of theory of network governance underscored how network theory predicts that when *trust* and *competence* are present, inter-organizational relationships are more likely to work (Podolny and Page, 1998; Schrank and Whitford, 2011; Pansiri, 2008). Hence, we draw our hypotheses from this starting point, differentiating these two constructs for the types of stakeholders involved in the development of collaborations.

The first point we want to address is that the relationship between potential partners has to be characterized by trust, otherwise the collaboration would be difficult to sustain.

H1: Trust towards the potential partner positively influences the likelihood of having a collaborative strategy.

Our second hypothesis addresses the competency side of collaborations. In particular, we hypothesize that managers' understanding of collaborative relationships can influence their collaborative strategy. Following Long et al. (1990) and Murphy (1983) we split this construct into two different aspects: managers' perception and managers' attitude. We expect both

perception of importance and attitude towards collaborations having a positive impact on firms' collaborative strategies, therefore the following hypotheses are proposed:

H2.a: Managers' perception of importance of collaborations positively influences the likelihood of having a collaborative strategy.

H2.b: Managers' attitude towards collaborations positively influences the likelihood of having a collaborative strategy.

Moreover, since associations act as intermediary in formal contexts of negotiation, our third hypothesis addresses the relationship between category associations and their members. We divide it in two hypotheses in agreement with Zaheer et al. (1998), who highlight how the combination of trust and conflict can differently (in their interdependence) impact on inter-organizational performances. In particular, we expect trust towards the association positively influencing firms' collaborative strategies, and conflicts with the association negatively affecting them.

H3.a: Trust towards the association positively influences the likelihood of having a collaborative strategy with other firms.

H3.b: Conflict with the association negatively influences the likelihood of having a collaborative strategy with other firms.

Policy makers can be only indirectly considered as influencing firms' collaborative strategies. Local government (as well as higher levels of geographical considerations), in fact, is usually thought as involved only to the extent of attaining macro-objectives (Jenkins and Henry, 1982), mainly related to the economic and social development of the whole destination. But little agreement exists on which level of involvement would be optimal in fostering collaborative relationships among local tourism organizations (Dredge, 2006), and specifically which expectations firms have about the role of public institutions. The contribution of the present work, besides testing the above specified hypotheses, lies also in providing a framework to answer to this question.

1.4 Research Setting

Our research setting is the tourist destination of Venice. In order to focus on our main research question and test our hypoteses, we explore a specific setting of inter-organizational relationships, that of the Venice Film Festival (VFF) and the local hospitality system (HS).

The VFF is a cultural event of international fame: it was the first competitive film festival of the world, born in 1932. It is still considered by experts one of the few film festivals configuring the field (Lampel and Meyer, 2008), among those of Cannes, Berlin and Toronto.

The VFF lasts 10 days and it is usually held at the end of the summer season, it begins at the end of August. The Lido island, the biggest of the city of Venice, is the historical location of the Festival: its first edition was hosted by the Hotel Excelsior, and in 1937 it was moved in a brand-new Palazzo del Cinema, a theater with multiple screens located on the same square of the hotel. The HS of Venice counts 403 hotels: 17 hotels belong to the five stars and five stars luxury category, 98 are four stars hotels, 174 are three stars hotels, and all the remaining are distributed among the lower categories. Hotels are grouped in three different associations: AC gathers almost all the big and higher-category hotels, AV is the oldest association and groups the larger part of the venetian hotels, AT is a smaller group of hotels mainly located on the Lido island.

The VFF is tied to the HS by a tight complementary relation (Milgrom and Roberts, 1995; Siggelkow, 2001): the festival experience, that can be categorized within the event tourism (Getz, 2008, 1989), is complemented by the hospitality system, as well as by all the complementary services its visitors require (transportation, restaurants, etc.), hence its value depends on the overall quality of the system. From the HS point of view, the realization of a cultural event of international appeal in the city of Venice creates high tourist demand and high value (Getz, 2008). In this situation of systemic interdependence, given by complementarities, the scenario can be labeled as characterized by high complexity of inter-organizational relationships (Siggelkow, 2002; Rivkin, 2000). In such an environment, the literature suggests networks as the most suitable form of governance (Gulati, 1998).

In defining the set of stakeholders we will consider in our analysis, we identify as subjects potentially relevant in fostering inter-organizational relationships the following: the Local Administration (LA), VFF, AC, AV, AT, and the hotels themselves. Hence, our hypotheses will refer to hotel's collaborative strategies towards the VFF (the potential partner), and the three hotels' associations will be the reference for the mediators.

Inter-organizational relationships between the VFF and the HS have a long-lasting history of failed attempts, partial successes and not-so-straight interrelationships. We selected it as our research setting because of the context complexity: as stated by Siggelkow (2007), cases can be used to explore if there is "something missing in the theory, motivating further research and justifying more refined conceptualization". In our context, the analysis of inter-organizational relations developed at multiple levels and among different stakeholders (Dredge, 2006; Bonetti et al., 2006), aims at shedding further light on how tourism networks actually work.

We adopted a multi-method approach in order to cope with this analytical complexity. We test our hypotheses on survey-data collected right after the 68th edition of the VFF. The interpretation of hypotheses testing results is supported by data coming from semi-structured interviews to principal stakeholders, direct observation of participants' interactions, documents and VFF's archival data (Yin, 2009). A more detailed account of qualitative data collected is provided in the Appendix.

1.5 Methods

1.5.1 Data

Sample. Our reference population is represented by all the hotels located in the area of influence of the VFF, belonging to an association. From the universe, a sample of 198 hotels (representing 75% of the population) was selected, following the criterion of representativeness of hotels'category, association and location (in terms of distance from the Festival).

Questionnaire. A web-based questionnaire was prepared and it was pre-tested with associations' directors. Hotels' managers have been invited to participate to our questionnaire by e-mail. Following Dillman's techniques (1978; 1991), we followed-up with correspondence in order to maximize the response rate. We received a total of 69 valid questionnaires, for a final response rate of 35% of individuals eligible and willing to participate (69/198).

Testing for Nonresponse Bias. In order to assess possible threats to internal validity of our work, we carried out t-tests so as to detect differences in means between respondents and nonparticipating hotels. No significant differences (p-value < 0.01) were found for hotels' category ($t = 1.46$, $df = 196$, $p = 0.15$), location ($t = 2.10$, $df = 196$, $p = 0.04$), and association ($t = -0.29$, $df = 196$, $p = 0.78$).

1.5.2 Measurements

Table 1.1 reports all items used to operationalized our variables. In order to measure the constructs of interest, we used instruments coming from the literature where available. We used the Cronbach's α coefficient to get an estimate of the reliability of scales in which all items are weighted in the same way. All the α coefficients are well above the recommended value of 0.70 (Nunnally, 1978). Details about the construction of the instruments follow.

Measures and Items	**Loadings**	**Cronbach's α**
*Trust VFF**		.815
Actions undertaken by VFF are coherent, I know what to expect (P)	.887	
VFF is reliable for what concerns collaborations (R)	.646	
Facing eventual problems, VFF would be willing to help us (R)	.603	
VFF is trustworthy (R)	.719	
(1=strongly disagree, 4=neither agree nor disagree, 7=strongly agree)		
*Trust association**		.939
Actions undertaken by my association are coherent, I know what to expect (P)	.997	
My association has always been evenhanded in collective actions (F)	.869	

Measures and Items	**Loadings**	**Cronbach's α**
My association looks out for members' interests with equal concern (F)	.842	
I am sure my association would not act against my interests, even if the opportunity presented itself (R)	.641	
I would feel a sense of betrayal if my association behavior was below my expectations (R)	.969	
My association is trustworthy, it represents my interest (R)	.905	
(1=strongly disagree, 4=neither agree nor disagree, 7=strongly agree)		
General Collaborative Attitude		.894
Effort put in collaborations is repaid in terms of income	.582	
Effort put in collaborations is repaid in terms of image	.882	
Effort put in collaborations is repaid in terms of customers' satisfaction	.866	
Effort put in collaborations is repaid in terms of customers' fidelization	.820	
Effort put in collaborations is repaid in terms of differentiation	.821	
(1=strongly disagree, 4=neither agree nor disagree, 7=strongly agree)		
Collaborative Attitude VFF		.895
Collaboration with VFF is important for customers' fidelization	.842	
Collaboration with VFF is important for differentiation	.753	
Collaboration with VFF is important for increasing our occupancy rate	.699	
Collaboration with VFF is important for tying our image to a cultural event	.801	
Collaboration with VFF is important for reducing marketing costs	.726	
Collaboration with VFF is important for acquiring visibility on the cultural tourism market	.803	
(1=strongly disagree, 4=neither agree nor disagree, 7=strongly agree)		
Collaborative Strategy		.865
In the occasion of the last VFF, your hotel has:		
Offered tourism packages explicitly dedicated to the event's visitors	.614	
Offered an information service about the event	.159	
Reserved some rooms for the event's visitors	.546	
Proposed special services for the event's visitors	.804	
Did marketing campaign tied to the event's brand	.302	
Had personnel explicitly dedicated to the event's visitors	.832	
Hired temporary workers for the event's duration	.902	
Had collaboration agreements with VFF	.964	
Had personnel explicitly dedicated to manage relationships with VFF	.849	
(1= No, 4=Yes, it is a consolidated practice)		

*P = Predictability, F = Fairness, R = Reliability

Table 1.1: Measurement Instruments

Trust. In order to measure the two constructs related to trust - "trust in VFF" and "trust in the association"- we started building our instrument from that created and validated by

Rempel et al. (1985) and later adapted by Zaheer et al. (1998). We decided to base on this operationalization because it was especially used to measure inter-organizational trust at a close and personal level, thus reflecting our need to investigate the intercurrent trust between managers of different organizations. Items are oriented to capture elements applicable both at the interpersonal and inter-organizational levels of trust, and they exclude those measuring faith in favor of others capturing the fairness dimension of trust (Zaheer et al., 1998). In the two instruments the referent of trust has been adapted to our context, becoming either VFF or the association. Following Rempel et al. (1985), we ensured that the three dimensions of trust -behavioral, emotional, and cognitive- were present in our instruments.

Initial sets of items measuring the two constructs of interest were the same. However, factor analysis of the two trust measures (assessing the constructs for unidimensionality) showed a higher measurement power of reduced subsets of items. The final set of questions contained four items for "trust in VFF" and six for "trust in the association", all coming from previous literature (Rempel et al., 1985; Zaheer et al., 1998). The fairness component of trust resulted not relevant for trust towards VFF, thus the scale contains one item related to predictability and three reflecting reliability. Differently, in the case of trust towards the association, of the six items composing the final set, one assesses predictability, two are related to fairness and three address the reliability dimension of trust.

Collaborative Attitude. To our knowledge, validated instruments to measure collaborative attitude have not been developed so far. Starting from the assumption of utility-maximizing individuals, we focus the attention on effects on collaborative relationships' performance: the higher the acknowledgment of opportunities coming from collaboration, the better the attitude toward collaboration. We decided to weight the knowledge of possible profits with the knowledge of efforts or investments required for building and maintaining the collaborative relationships, thus our items acquire the "efforts is repaid in terms..." form. Items comprehend several possible dimensions of firm performance, from tangible to intangible ones, from economic to strategic ones. Factor analysis to assess the construct unidimensionality has been developed, leading to a final scale constituted by five items. In order to measure agents' "collaborative attitude towards VFF", we adapted the "general collaborative attitude" scale to the specific context. This construct expresses the willingness of hotels' managers to cooperate with VFF, due to the acknowledgment of its relevance in terms of potential revenues (material and immaterial). Tested the construct for unidimensionality, the final scale is composed by a pool of five items.

Collaborative Strategy. Also in this case we built our own measurement instrument for collaborative strategy since, to our knowledge, no validated scales are available in the literature. Following (Evans, 2001), collaborative strategies implementation in the tourism field can be conceptualized along five different strategic areas: marketing, product, information system, equipment and human resources, logistics. We developed our scale proposing items for each of

the strategic areas, asking hotels' managers if their firm adopted such organizational practices and if they were consolidated ones or not. From the initial pool of items, factor analysis led to the identification of a subset of 9 items with higher measurement properties.

Conflict. One item measured the degree of conflict between hotels and their association. The item was adapted from Zaheer et al. (1998) and Van De Ven et al. (1976).

Importance of Collaboration. One item is dedicated to agents' self-assessment of their perception about the importance of being involved in cooperative relationships.

1.5.3 Analysis

From the scales developed, we built our variables. The dependent variable, "collaborative strategy", is built as follows: we attributed a "0", namely the unsuccessful outcome, to all respondents who declared to have not adopted any collaborative activity or, at most, the only information service; we attributed a "1", the successful outcome, otherwise.

All other variables were built on an additive base, as the assessment of their validity through the Cronbach's α coefficient requires. Since other elements of the transaction context can play a role in the adoption of collaborative strategies, we control for the hotels' stars classification, which is a good reference for qualitative levels and specific structural assets of hotel firms.

Table 1.2 reports some descriptive statistics of our data. For clarity of exposition, we rescaled our variables from 1-7 to compute means and standard deviations, while the variable "collaborative strategy" is still reported as a binary variable. A first consideration can be made by observing that only 22% of respondents activated a collaborative strategy during the 68th edition of the Festival. This result in some way mirrors the general scenario of the destination depicted through the analysis of archival data and interviews.

Trust variables are both close to the "neutral score", but respondents show higher trust levels for their association in comparison to the VFF. It is important to note that this difference can be explained by the low level of interactions that respondents had with the VFF (data emerging from the few collaborative strategies adopted), given that trust is known to be strongly linked to experience and repeated interactions (Zaheer et al., 1998). The conflict variable with the association is even more close to the average scale value of 4, indicating that not significant conflict is acknowledged by respondents.

Higher results are registered for the competence dimensions of collaboration, namely the perception of importance and the attitude. Importance of collaborations is on average evaluated 5.75 points out of 7. On the other side, an interesting result is that the collaborative attitude towards the VFF is assessed significantly lower that the general collaborative attitude respondents declare to have towards generic cultural institutions: 4.17 against the general 5.25. Again it is possible to trace back this result to the low levels of collaborative attitudes ever activated by respondents, but it is also suggesting that the effort of building collaborative

Variables	Mean	Std. Dev.	1	2	3	4	5	6	7	8
Coll. Strategy	0.22	0.42	1.00							
Trust VFF	4.14	1.10	0.62	1.00						
Trust Association	4.38	1.48	0.31	0.42	1.00					
Importance Coll.	5.75	1.42	0.27	0.21	0.13	1.00				
Coll. Attitude Gen.	5.25	1.33	0.13	0.23	0.07	0.71	1.00			
Coll. Attitude VFF	4.17	1.58	0.42	0.45	0.30	0.60	0.61	1.00		
Conflict Ass.	4.06	1.77	-0.04	0.03	0.39	-0.03	-0.18	-0.06	1.00	
Stars	3.12	0.95	0.20	-0.03	-0.11	0.08	0.10	-0.03	0.04	1.00

Table 1.2: Descriptive Statistics

strategies with the VFF is not perceived as worth of.

In order to test our hypotheses (H1, H2 and H3) we develop a logit analysis. Our binary dependent variable, as said above, is "collaborative strategy", which takes value "1" if hotels adopted at least one collaborative practice other than the information service, and value "0" otherwise. Our model is in the form of:

$$p(\boldsymbol{x}) \equiv P(y = 1|x) = G(x\boldsymbol{\beta})$$

where $x\boldsymbol{\beta} = \beta_1, \beta_2 x_2, ..., \beta_k x_k$, and $G(\cdot)$ is the cumulative distribution function which maps $x\boldsymbol{\beta}$ into the response probability (Wooldridge, 2001). In the logit model, where $G(z)$ is the logistic function, the sign of the effect of x_j on the probability of adopting a collaborative strategy is given by the sign of β_j. It is important to know that the magnitude of our parameters is not interpretable as belonging to a defined scale, thus only relative comparisons are possible.

1.5.4 Results

Table 1.3 summarizes regression results for our models. Model 2 is showed to better fit our data dropping the collaborative attitude towards the VFF, but both models are showed to fit good with our data ($\chi^2_1 = 45.801(7\text{df})$, $p < 0.001$ and $\chi^2_2 = 45.275(6\text{df})$, $p < 0.001$).

Hypothesis 1 expected *Trust towards the VFF* to have a positive impact on the adoption of collaborative strategies. This hypothesis is supported by our data, since the coefficient is positive and significant at a 99% confidence level ($\beta = 0.75$, $p < 0.01$).

Hypothesis 2.a, predicting a positive relation between perception of the importance of collaborations and the dependent variable is supported by data, with a 90% confidence interval ($\beta = 1.59$, $p < 0.10$). The positive relation between collaborative attitude and collaborative strategies predicted by H2.b is not supported. Rather, the relationship is both negative and statistically significant ($\beta = -0.267$, $p < 0.05$).

Hypothesis 3.a, predicting a positive impact of *Trust towards the association* on collaborative strategies is not supported by our data, namely we get a positive coefficient but not statistically significant. A negative relation between *conflict with the association* and our

Variables	**Model 1**	**Model 2**
	β_1	β_2
Intercept	-20.16 ***	-21.82***
	(7.157)	(7.279)
Trust VFF	0.69 ***	0.75***
	(0.245)	(0.245)
Trust Ass.	0.13	0.153
	(0.123)	(0.123)
Importance Coll.	1.30	1.59*
	(0.915)	(0.867)
Conflict Ass.	-1.01 *	-1.06*
	(0.613)	(0.628)
Coll. Att. Gen.	-0.28 **	-0.267**
	(0.120)	(0.118)
Coll. Att. VFF	0.06	-
	(0.088)	
Stars	1.51 **	1.46**
	(0.769)	(0.727)
Null deviance	72.25(68df)	72.25(68df)
Residual deviance	26.45(61df)	26.98(62df)
χ^2	45.801(7df)	45.275(6df)
AIC	42.454	40.98
Observations	69	69

(*) $p < 0.1$, (**) $p < 0.05$, (***) $p < 0.01$.

Data inside parenthesis are the corresponding standard errors.

Table 1.3: Determinants of Collaborative Strategy, Results of Logit Regression

dependent variable, predicted by H3.b, is supported by data at a 90% confidence interval ($\beta = -1.06$, $p < 0.10$).

Discussion of these results is provided in section 1.6.

1.5.5 The Role of Local Administrators

The role played by local administrators in fostering collaborative strategies has been investigated separately. The level of interactions with the local businesses, in fact, is quite different with respect to direct interlocutors as the associations or the VFF. For this reason, we developed a new set of questions aimed at investigating which are managers' expectations about the LA involvement in collaboration and coordination policies (Malbert, 1998). Our hypothesis is that the role of LA can be evaluated along two dimensions: *technical knowledge* and *level of involvement*. These two dimensions are suggested by Jenkins and Henry (1982) in their work about the involvement of government in tourism, in which they investigate the option for local governments to be actively involved in tourism governance both on the managerial and development dimensions. In agreement with their work, we define the first dimension as the knowl-

Variables	**Factor1**	**Factor2**	h^2
LAs should be *Negotiators*	.75		.64
LAs should be *Investors*	.65		.45
LAs should be *Mediators*	.79		.72
LAs should be *Facilitators*	.83		.72
LAs should be *Coordinators*	.64	.54	.70
LAs should be *Planners*		.92	.85
LAs should be *Technical Experts*		.64	.56
LAs should propose a long-term *Vision*		.70	.71

Table 1.4: Principal Component Analysis - The Role of Local Administrators

edge about means through which possible cooperative dynamics can be fostered and about the context-specific features of the tourism destination that can affect inter-organizational relationships. The level of involvement is meant to catch how much the LA is meant to play a first-line role in promoting and sustaining collaborative strategic processes among businesses and institutions, and how deep the public interventions are expected to be.

Table 1.4 shows the set of variables respondents were asked to measure on a 7-point Likert scale (where "1" corresponds to strongly disagree, "4" to neither agree nor disagree and "7" to strongly agree). We developed a Principal Component Analysis, in order to investigate the underlying structure of our variables. Two components emerged to be sufficient to describe interrelations between variables ($p < 0.001$, fit $= 0.96$). Although the *Coordinators* item results loading high on both factors, we decided to keep it as an indicator of how the coordinating role is perceived to represent both dimensions investigated. A visual map aimed at clarifying the dimensional space built on our two dimensions is provided by figure 1.1.

Average results are shown in table 1.5 rescaled on a 0-1 interval for clarity of exposition. Respondents assigned high relevance to both dimensions characterizing the role of LAs. Technical knowledge is perceived of slightly higher importance with respect to the level of involvement administrators should have in fostering coordination and cooperation among stakeholders. In particular, it seems interesting to note that the highest score is assigned -on average- to *planners* and *vision proponents*. Both roles are characterized by a sort of long-term approach, and both of them requires high levels of technical knowledge but relatively low levels of involvement.

These results show that hotels expect the LA to know well the specific needs of the territory and to act as a macro-level planner. Competencies seem to play a relevant role in designing the ideal type of LA, which our data describe as an external stakeholder able to show the actual opportunities coming from collaborative strategies in a long-term vision.

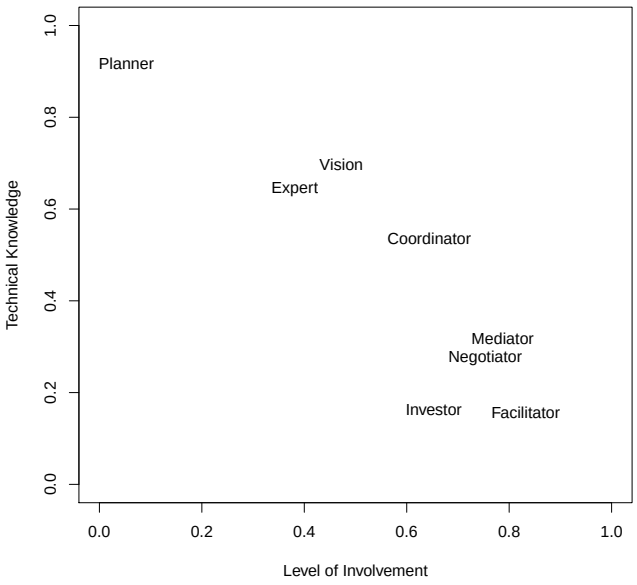

Figure 1.1: Mapping items over two dimensions

Variables	**Scaled Average Results**
Involvement	0.77
LAs should be *Negotiators*	.69
LAs should be *Investors*	.77
LAs should be *Mediators*	.75
LAs should be *Facilitators*	.81
LAs should be *Coordinators*	.81
Technical Knowledge	0.83
LAs should be *Planners*	.85
LAs should be *Technical Experts*	.77
LAs should propose a long-term *Vision*	.85

Table 1.5: Average Results - The Role of Local Administrators

1.6 The role of different stakeholders: discussing results

Although from regressions we got almost all significant coefficients (at least at the 90% of confidence level), we had some results that need further help in their interpretation. Hence, in order to give a more comprehensive understanding and more robustness to our results, we triangulate them with qualitative evidence.

Our *hypothesis 1* predicted a positive relationship between the trust towards potential partner and the likelihood of adopting a collaborative strategy. Findings confirm that *trusting the potential partner* is an important precondition to collaborative strategies. The low level of average trust towards the VFF (4.14 on a 7-points scale) may be traced back to the somehow difficult past relationships between the VFF and HS. The analysis of our interviews suggests that their common history has been everything but smooth. The VFF's director describes it as follows:

"We could talk of relationships micro-breaks. A global break never happened. We had always have a dialogue, a dialogue that still lasts. But there are some cases of entrepreneurs that decided one year to collaborate and the other not. Some firms some years worked more with us, some other years less. Someone was satisfied, someone else was not. The same can be said for us."

Similar results emerge from the analysis of archival data, telling a story of positive and negative episodes regarding collaborative relationships (from hotel's side, there is significant evidence about satisfaction coming from coordinated initiatives and events, but for example, dissatisfaction for VFF's payments time). This low level of trust highlights a first weakness of the Venetian system, since one important precondition for the development of collaborative strategies is lacking.

The *hypothesis 2.a*, predicting how the managers' perception of collaboration's importance has a positive impact on the adoption of collaborative strategies, was supported by the data, showing even a double magnitude with respect to trust towards the VFF. Average assessments for this variable are around 5.75, so almost close to the top of the scale. This result suggests that some fertile ground to build collaborative relationships between the HS and VFF is available.

In our interviews, the importance of collaborations is acknowledged also by associations' directors, as well as the VFF's management: they define network governance as something *advisable*, *desirable* and in some cases *necessary*. The general awareness about desirability of this form of governance comes, first of all, from negative feedbacks and image that the Venetian destination has gained in the last years of ungoverned relationships. For example, emblematic is the article published by Variety in 2002:

"[...] Shouldn't the oldest and arguably most prestigious film festival in the world be running like a well-oiled machine at this point–even though it's in Italy? To be blunt, it's not. From an organizational point of view, it's a creaky mass of disconnected parts. [...]The fest has no

real center, and there's no linkage between press operations, hospitality, programming, protocol and the grossly overpriced and under-accommodating hotels on the Lido."

Publicity akin to this appeared many times on national and international press during the years. It can be argued that its negative returns affect all stakeholders involved -VFF, HS, LA- since the global destination's image is a common shared resource to which all contribute and of which everyone benefits. Data tell that the few collaborative strategies adopted by the HS and VFF are *destroying value* that would be created through such a cultural event.

A surprising and interesting result comes from the test of *hypothesis 2.b*, predicting a positive relationship between hotels' attitude towards collaborations and their collaborative strategy with the VFF: the estimated coefficient predicted a negative relationship, namely as the general attitude increases, the probability of adopting a collaborative strategy decreases. This result suggests how in our context there seems to be an unexplained *gap between theory and practice*, as respondents who have higher awareness of potential benefits of collaborations do not adopt collaborative strategies with the VFF. In agreement with this consideration are data from the qualitative analysis reported above: despite the awareness of the potential value that could be created through network governance, still other factors seems to inhibit the creation of inter-organizational relationships.

Interpretation of results about hotels' associations playing a role in fostering collaborative strategies is not straightforward. The *hypothesis 3* predicted a positive relation between trust towards the association and the likelihood of adopting a collaborative strategy, and vice-versa a negative relation for the conflict dimension. The model estimation returns a positive but not statistically significant coefficient for the trust variable, while we get a negative and significant coefficient for the conflict one. The negative effect of past conflicts with the association on the willingness to adopt collaborative strategies is even stronger than the effect of trusting the VFF.

Associations, then, are certainly playing a role in the intermediation between associates and the VFF, since in the presence of conflicts they are able to negatively influence their members' willingness to collaborate with the Festival. Evidence about the history of relationships between the VFF and associations (as intermediaries) emerge in the analysis of archival data. Documents suggest that until 1972 there had been a sort of collaboration between the VFF and the HS developed on two main aspects: prices and reservations. A first document is a letter dated 3rd of April 1967, addressed by the AV to the direction of the Festival:

"We are confident that this respectful Institution will want to appreciate the effort of Lido hotels to maintain the engagement in keeping unchanged the special prices for "VFF", prices that are almost the same since 1964, despite the well-known general, sensible increasing in costs registered from then on."

Again the issue is treated in a following letter of 1972, mailed by the president of the AV to the Festival's director:

"We are confident that this respectful Institution will evaluate favorable the decision taken by these hotels in determining such prices. In fact, you need to take into account the general and sensible increasing in administrative costs between 1970 and 1971, and the serious contractual situation, that through a series of strikes and agitations have partially compromised the touristic season with even more heavy implication for the future;[...] we refer, as already said, to luxury hotels belonging to the first category, since the second-category hotels, for the reasons above reported, could not confirm, as in the past, their agreed rates, keeping the opportunity to answer you personally to your eventual requests."

But other documents, mainly among the VFF director's correspondence, highlight how the hotels did not rely only on the Association to design some kind of agreements with the Festival. They also took part personally in the negotiation with the Festival, as the letter of a four stars hotel to the VFF, written in 1970, shows:

"Considering the period of very high seasonality, during which the Venice Film Festival will be held this year, and the unbearable delay with which this Institution can pay the hotels bills for the participants, for the current year 1970 our irreducible prices will be the following [...]."

Hence, relationships and coordination on the mediators level seem to have some critical traits. In the Venetian context hotels associations are very fragmented, as the VFF's director points out:

"There are many different hotels associations, not all representative of the reality of the hotels. This is a first element of important difficulty".

The same is noted by LAs:

"We have three different associations that should intermediate with the VFF. It becomes difficult: for such few hotels, having three different associations, it's absurd".

Representativeness seems to arise as a context-specific issue, characterized also by a paucity of trust towards the association (with an average score of 4.38 out of 7) that can affect itself the success of intermediation processes and consequently of collaborative strategy adoption. The AT director's narration also supports the intuition:

"It happens that often the representatives come to the meetings -roundtables for specific initiatives- but then the communication [within the association] isn't... isn't really positive. Thus someone, maybe the more dry branches, does not agree with the conclusions or the choices made by the association, and doesn't follow the guidelines, damaging the whole group."

An emblematic instance of the representativeness issue, is provided by the evidence available from direct observation (through ethnographic techniques (Van Maanen, 1979)) of a formal attempt of coordinating activities made by the LA, in sight of the 68th VFF. Stakeholders had been invited to a roundtable with the aim of finding a common ground for cooperation. Although the agreement was reached at the roundtable (with participants the VFF, AC, AV, AT and LA), at the end only few firms adopted a collaborative strategy towards the VFF (such as offering specific services asked by the festival's audience, late breakfast and dinner,

fast and free Internet wireless, an information desk for the Festival, a TV tuned on the VFF's channel etc.). The LA president reports:

"We asked four weeks ago to send the proposals to the VFF, and only few answered. Something is changing, there have been some offers, farther hotels offer a free transportation service, some yes some no, but... Maybe the Associations should help."

Evidence points in the direction of an important role of associations in fostering collaborative strategies, and they seem to suggest that Venice's difficulties may lie in this domain.

Results concerning the expectations about *the role of LAs* in a network form of governance tell that hotels expect the LA being high-skilled in managing and coordinating collaborations, knowing well which are the potential grounds of encounter between the HS and VFF. LAs are expected to be involved in the building process of inter-organizational relationships, even if they are meant to be representatives of long-term interests for the destination system. These results are well supported by interviews to key-stakeholders: the VFF and associations directors imagine the role of LAs as *central coordinators*, *planners* proposing a *common vision* for the event and the destination (as stated by an association's director, *"When there are things important like these, the direction have to be common"*).

1.7 Conclusions

In this paper we contributed to answer the question whether relevant stakeholders of a tourism destination could help in fostering collaborative strategies between tourism businesses and organizations. The case study of the Venice Film Festival and its local hospitality system has been elected as our research setting, given its evident difficulties in building inter-organizational relationships.

Tourist destination management research widely acknowledged the relevance of network form of governance and inter-organizational relationships development for destination competitiveness, marketing and value creation (Ritchie and Crouch, 2003; Hallak et al., 2012; Evans, 2001). The investigation of how this process can be sustained by the role played by different stakeholders has important implications both for public and private policy.

Starting from the analysis of coordination mechanisms proposed by network theory, we identified two preconditions which make cooperative relationships work: competence and trust. Our hypotheses are that if competence and trust characterize the relationships among the involved stakeholders, tourism networks shall work. We contextualized these hypotheses in our setting, considering three distinct types of destination stakeholders. On the one level there are hotel businesses of the HS and the VFF itself, while on a different level lies the relationships between the two, mediated by hotels' associations (AC, AV and AT). Taking as our dependent variable the collaborative strategies adopted by hotels, we investigated which is the role of associations and the VFF itself in influencing their decision to cooperate or not.

Policy makers are identified with the local administrators of the tourist destination system, for which we investigated how the LAs can help in making collaborations work in the whole community's interest.

Our findings confirm that trust and competence are two relevant variables in explaining inter-organizational relationships in tourism destinations, even if we got weaker results for the role of mediators. Moreover, the two dimensions selected for the investigation of the role of local government in fostering inter-firm collaborative relationships, namely the level of involvement and technical knowledge, revealed to be consistent and explanatory for our data.

1.7.1 Implications

As previously stated, this work has implications both for private and public policy. Identifying how different stakeholders can influence network's functioning allows to undertake specific interventions in order to increase trust or competence or both, not generally addressed to the whole system, but aimed at solving distinct weaknesses.

In the analysis of the tourism destination of Venice, focused on the interaction between the local Hospitality System and the Venice Film Festival, it emerged how a paucity of trust characterizes the relationships between the HS with both the VFF and their associations. On the competence side, the HS showed how a fertile ground for building cooperative relationships is available.

Hence, a potential path to exit from failing dynamics of collaboration would be on the one side, to start some trust-building actions within each association, and between the HS and the VFF; on the other, to build specific control mechanisms to reduce the risk of collaborative strategies (Das and Teng, 2001). In particular, a sharing goals process and mutual interest communication is acknowledged as one important source of trust (Rempel et al., 1985). Moreover, Zaheer et al. (1998) found that interpersonal and inter-organizational trust are two different concepts, although highly correlated: thus developing individual-level trust through team building processes (for instance, the creation of small project-oriented commissions) would have a positive impact also on inter-organizational trust (Das and Teng, 2001). On the other side, building routines or specific policies and procedures for interactions would create some reciprocal control mechanisms between organizations (Littler and Leverick, 1995).

From a public policy point of view, expectations of local stakeholders allowed to identify the dimensions on which the public intervention would be more effective in fostering collaborative strategies between stakeholders. In the Venetian research setting, local players indicated the technical coordination as an optimal strategy for Local Administrators. They expressed the need to share a long-term vision of the whole tourism destination, in order to be able to insert their collaborative strategies in a wider and long-term scenario. Combining the needs of technical expertise and medium level of involvement, the consideration is that LAs are meant to offer a neutral ground for interactions to which contribute with experts about the specific

context within which collaborative strategies could be developed.

1.7.2 Limitations and suggestions for future research

We acknowledge that, notwithstanding the use of a case study has several advantages in terms of deepness of analysis, it may also be a limitation in terms of generalizability of results.

Our work contributes to develop a general framework for the analysis of tourism destination contexts that are amenable for network governance. This study could be replicated in other research settings in order to assess its external validity.

Moreover, an interesting improvement of the present work would be a further investigation of the mediators role, assessing the magnitude of their influence on collaborations successes or failures. Although several studies have been developed in the tourism networks domain (Selin and Beason, 1991; Pforr, 2006; Hallak et al., 2012), to our knowledge there are no contributions to fill this gap. In our context, the scarcity of actual collaborative strategies adopted did not allowed to develop such a deep analysis of the weight the mediator has to the collaboration building process. Nevertheless, our preliminary findings on qualitative analysis suggest that mobilizing practices within category associations (our reference for mediators) can significantly affect the possibility to develop network forms of governance. Hence, an intriguing future possible development of research in this field could consider the extension of the analysis of mediators' role to theories of political coalitions (March, 1962; Whitford and Zirpoli, 2009) and social movements (Kaplan, 2008).

1.8 Appendix

Sources	Description
Internal	
Interviews	
18, 18h10min	Interviews were developed from February to May 2011. All key-stakeholders of the macro-system were interviewed at least once. The majority of interviewees occupied their position at least for 10 years, thus being able to provide an historical perspective of the situation. All interviews have been recorded and typed.
Ethnography	
2, 3h15min	The two meetings to which the authors were invited to participate as external observers were held in March and April 2011. The meetings were hosted by the Lido Municipality. The meetings have been recorded and typed, and notes about participants' behaviors were taken.
External	
National Press	
2001-2011	All articles of the VFF national press review were analyzed. Articles about the relationships between the VFF and the HS have been selected. For 11 years of press review, from more than 5000 articles available, around 600 articles have been analyzed.
Observers	Articles containing opinions of third parties, external to the macro-systems, were classified as "observers". Evidence of the system's performance and perception of relationships is provided by this type of articles.
Macro-system	Articles reporting interviews or official declarations of the macro-system's members were classified as "macro-system". This evidence was mainly used to reconstruct the last 11 years history and to triangulate evidence from Internal sources.
International Press	
2001-2011	All articles of the VFF international press review were analyzed. Articles about the VFF performance, the HS performance, and their links, have been selected. For 11 years of press review, around 50 articles have been analyzed. Evidence for relationships success or failure was found, as well results about value detriment or increase from collaborations.
VFF Archival Data	
1967-1983	Data accessible from the VFF archives regard all official documents collected for each festival's organization. Contracts, applications, movies' papers, meetings' transcripts, official correspondence, etc. are available. Documents after 1983 are still secured. Data regarding official correspondence between the VFF and HS were analyzed, aiming at reconstructing the past history of their interrelationships.

Table 1.6: List of sources and brief description

Interviewees	#	**Duration**
Venice Film Festival		
Managerial Director	1	1h
Marketing Director	3	3h30min
Press Manager	1	1h10min
Local Government		
Tourism and Culture Counselor - City of Venice	1	1h
Vice-president - Lido Municipality	3	2h30min
Tourism and Culture Counselor - Lido Municipality	3	2h
Hospitality System		
AV Director - Venice	1	1h
AV Director - Lido	1	1h15min
AT Director	1	1h
AC Director	1	1h
Hotel Manager 1	1	1h30min
Hotel Manager 2	1	1h15min
Tot.	**18**	**18h10min**

Table 1.7: List and duration of interviews

	Organizers	**Participants**	**Duration**
1.	*Lido Municipality* Vice-president Tourism and Culture Counselor	*Hospitality System* AV Director - Lido AT Director AC Director Hotel Manager 1	1h 30min
2.	*Lido Municipality* Vice-president Tourism and Culture Counselor	*Hospitality System* AV Director - Lido AT Director AC Director Hotel Manager 1 *Venice Film Festival* Managerial Director	1h 45min

Table 1.8: List of participants and duration of observed meetings

2 Searching for Causes of Network Failure: the case of the Venice Film Festival and the Local Hospitality System

2.1 Abstract

Organizational and sociological research dealing with network governance has left partially unexplored the field of failure, producing empirical studies mainly focused on networks advantages rather than their problems or dysfunctionalities. Even if some first attempts in explicitly theorizing network failures have been made, we provide an empirical case showing that explanations offered by this birthing theory are not exhaustive, thus highlighting that the existing conceptual framework must be extended. Our claim is that the classical approach to the study of network governance as constituted by ties and nodes, namely by interconnected unitary actors, is not able to grasp the main failing dynamics emerging from our empirical analysis. Introducing granularity concerns, we argue that only considering the politics dimension we are able to identify the causes of our specific case of failure, that of a contested network. Drawing on the literature of social movements and cognitive frames, we investigate how the cross-organizational political coalitions engage in mobilizing processes for legitimating competing frames about collaborative relationships. Our empirical evidence comes from a qualitative study of a network that, despite several attempts, failed to emerge between the Venice Film Festival organization and its local hospitality system.

2.2 Introduction

Organizational research has developed noticeably since Walter Powell's (1990) call for a "new conceptual toolkit" to describe "networks that are neither markets nor hierarchies" (Dixon and Dogan, 2002; Powell, 1990). Motivated in part by networks' increased empirical evidence and in part by the challenge represented by some economic views of organization (Granovetter, 1985), economic sociologists and organizational scholars have put a strong emphasis on functionalities of networks, somehow neglecting constraints and disadvantages of this form of governance (Podolny and Page, 1998). Studies on network governance highlighted how networks are more likely to emerge in those environments characterized by unstable demand, dispersed and rapidly changing knowledge, and complex interdependencies such as co-evolutionary environments, complementary resources, etc. (Smith-Doerr and Powell, 2005). But empirical observations demonstrated that also in those contexts where networks would be the optimal form of governance, forms akin to markets or hierarchies emerge, as well as other examples of under-performing networks. Although the literature is rich of evidence of failing networks (Podolny, 2001), still little effort has been done in explicitly theorizing such failures (Podolny and Page, 1998; Schrank and Whitford, 2011). As the more established theories of market and organizational failure (Bator, 1958; Meyer and Zucker, 1989), theory of network governance needs to be completed and deepened in the failure area.

From Powell on, studies devoted to the recognition of networks as a distinctive form of governance highlighted how they are "forms of exchange more social -that is, more dependent on relationships, mutual interests, and reputation- as well as less guided by a formal structure of authority" (Powell, 1990). The social dimension is largely recognized as what characterizes and distinguishes networks from markets and hierarchies (Eccles and Nohria, 1992; Granovetter, 1985; Jones et al., 1997; Uzzi, 1997; Williamson, 1991). On its declinations and shades, sociology and organizational studies have identified those mechanisms that sustain network governance, such as: trust (Helper et al., 2000; Larson, 1992; Uzzi, 1997); reputation and reciprocity (Kogut, 1989; Powell, 1990; Williamson, 1991); information transfer and learning (Larson, 1992); joint problem-solving arrangements (Uzzi, 1997); reciprocal lines of communication (Powell, 1990; Smith-Doerr and Powell, 2005). When these conditions occur, the literature demonstrates how firms are willing to forego immediate economic gain and to pool resources together (Uzzi, 1997), shifting their focus from the narrow economically rational reasoning to the cultivation of long-term cooperative ties (Dore, 1983). Understanding the causes that prevent these conditions to verify, thus inhibiting the creation of value through inter-organizational relationships, came to the attention of scholars only recently (Podolny, 2001).

The preliminary investigation of causes for network failure, starting from the identification of what makes a network functioning, leads to the recognition of two main threats, belonging to the category of *social conditions*: ignorance and opportunism. Ignorance, as well as incom-

petence, affects the ability of agents (and organizations) to solve joint problems, to transfer and receive information and knowledge (Cohen and Levinthal, 1990), to have efficient and effective reciprocal lines of communication. On the other side, opportunism represents the social behavior threatening trust, reciprocity and reputation of agents (Helper et al., 2000; Owen-Smith and Powell, 2008; Podolny and Page, 1998; Uzzi, 1997), mining the bases of social embedded transactions. On these two axes -ignorance and opportunism- Schrank and Whitford (2011) build their definition of network failure, identifying two types of absolute failures (*network devolution* and *network stillbirth*), and two types of relative failures (*contested network* and *involuted network*). Recognizing that networks can fail in absolute as well in relative terms is particularly relevant in light of the acknowledgment of network form of organization as more than a mere *hybrid* between markets and hierarchies (Williamson, 1975, 1985, 1991), and of the resultant necessity to overcome the idea that "markets are the starting point, the elemental form of exchange out of which other methods evolve" (Powell, 1990) and to which failures bring back.

In this paper we will present an exploratory case study of a network that is permanently failing (contested network) in the city of Venice, between the local hospitality system and the worldwide famous Venice Film Festival ("La Biennale" organization). Our empirical investigation is based on the analysis of 80 years archival data of La Biennale Cinema, a ten years press review, eighteen in-depth interviews to principal stakeholders and ethnography research in the occasion of a formal attempt to build a network form of governance in 2011 (Van Maanen, 1979). Data tell a long-lasting story of failed attempts of cooperation, as well as the absence of a network form of governance that would be that amenable in the first place. In the analysis of our case study we found that social conditions -ignorance and opportunism- do not suffice to give explanation of network failure, and we needed to extend the search for possible causes to political coalitions considerations.

In fact, notwithstanding the recent increasing attention devoted to network failure and the presence of some remarkable contributions, we acknowledge a gap in this theory: if social conditions can suffice to explain failure of networks composed by unitary actors, we believe that they cannot grasp all failing dynamics of networks formed by collective actors. We hypothesize that this theoretical underdevelopment is due to *granularity* problems, which concerned in more general terms theories of network governance. Within this literature, indeed, networks have been studied as composed by ties and nodes, and even if several authors tried to link individual agents to the overall network structure (Helper et al., 2000), nodes are mainly treated as unitary actors (Smith-Doerr and Powell, 2005). Overlooking granularity issues has the result of making theoretical toolkits unable to explain specific evolutionary network dynamics tied to individuals' joint action, especially if they belong to different "nodes" (Whitford and Zirpoli, 2009). We argue that investigating causes of network failure only through the ignorance and opportunism concepts is substantially limiting the actual understanding of what happens

inside the black boxes. Since inter-organizational networks are built on multiple levels of co-ordination, then it is necessary to adopt a different analytical approach for possible causes of network failure, related to organizational politics (Elg and Johansson, 1997; March, 1962) and social movements (Kaplan, 2008; Zald and Berger, 1978): as pointed out by -still few- studies of network governance, the internal organization of network members can seriously affect their collaborative relationships' performance, success or failure (Helper et al., 2000; Whitford and Zirpoli, 2009). The convergence between organizational politics and social movements research has recently gained increasing attention, especially for its relevance in the analysis of interactions between formal and informal ties, intra- and inter-organizational structures, and of their role in mobilizing resources (Kaplan, 2008; McCarthy and Zald, 1977). Political coalitions have been recognized as playing a fundamental role in driving networks evolution, in what they act within and across organizational boundaries (Whitford and Zirpoli, 2009). Hence, in developing our empirical investigation of a case of contested network, we attempt to extend the conceptual framework proposed by Schrank and Whitford (2011) including granularity concerns, suggesting the consideration of organizational politics as an additional dimension to understand failure of networks of collective actors. The present work is organized as follows: after the present introduction, the first section discusses the background theory, providing an overview of the main pillars of our theoretical framework; the following section presents our methods and data, while in the third section the case study is introduced; sections 4 and 5 provide findings on failing dynamics and the extension of the theoretical framework, respectively; closes a final section discussing our main results and potential future developments of research in the field of network failure.

2.3 Theoretical Framework

Failure by itself is a topic not new to economic literature, but in the last decades it attracted significantly the attention of organizational scholars that -the "black-box" approach behind the shoulders- started to investigate internal dynamics of organizations which, in some cases, can lead to failure (Podolny and Page, 1998). Theories of market and organizational failure have been significantly developed in past years, while the late recognition of network form of governance as akin to the other two caused a delay in the advancement of a theory of network failure. The first step to discuss governance failure is to identify *scope conditions* for theories of alternative modes of governance -markets, hierarchies and networks (Schrank and Whitford, 2011). Even though the consideration of the three alternatives as standing-alone forms of governance has significant limitations -especially for what concerns the analysis of mixed forms (Grandori, 1997)- this does not affect our discussion. Environmental factors are the starting point to define scope conditions of different theories of governance, in what they delineate organizational fields (Di Maggio and Powell, 1983) in which different forms

are desirable. Taking as a reference point the transactional conditions that make governance mechanisms potentially effective and efficient (Granovetter, 1985; Williamson, 1975), three stylized environments are identified as optimal for the three distinct modes of governance.

Market governance is preferable when products are homogeneous and highly standardized, demand is stable and there are many substitutable buyers and sellers, thus the environment is characterized by low uncertainty. Economic theory describes agents that coordinate in markets through the price system, which is the main coordination mechanism of this form of governance (Bator, 1958). Transactions are based on prices which incorporate full information about the product exchanged, and on the bases of the price system demand and supply meet each other (Grandori, 1997) [1]. Prices are the coordination mechanism both of free economies and regulated systems, it is the means through which the allocation process takes place (Stiglitz, 1989).

Hierarchy is amenable in the first place when the cost of coordinating transactions through market price is too high, making preferable the in-house production (Williamson, 1979, 2002): it is the case of imperfect information and asset specificity, in which few suppliers of an input highly demanded can take opportunistic behaviors due to their contractual power. Hierarchies, or organizations, can be defined as "systems of coordinated actions among individuals and groups whose preferences, information, interests, or knowledge differ" (March and Simon, 1993). Transactions are coordinated through authority and agency relations (Grandori, 1997), which translate in the "employment contract, under which workers maximize their utility by accepting the authority of the firm; that is, by agreeing to accept orders from the profit maximizers in charge" (Simon, 1991).

Networks are desirable in the first place in environments characterized by high levels of uncertainty, in which demand is unstable, knowledge and technologies are rapidly evolving and changing, and complex interdependencies among agents are present (McEvily and Marcus, 2005; Schrank and Whitford, 2011). Networks, as defined by Powell (1990), are those forms of exchange rooted in sociality, in which transactions are based on "relationships, mutual interests, and reputation" (Powell, 1990). Coordination mechanisms refer to social norms and informal practices, that may or may not be translated into rules and procedures (Grandori, 1997).

Environmental factors can be conveniently used to draw "idealized boundaries" between the optimal fields of application of distinct forms of governance, underscoring different mechanisms through which coordination problems are solved. *Failure* in absolute terms can be recognized, in the first place, in the absence of the optimal (more efficient and effective) mode of governance within the corresponding type of organizational field (Schrank and Whitford,

[1] As already stated, this is a simplification that does not affect the direction of our discussion. Nevertheless, it is important to note that "a market as the fullfledged governance form that we usually intend, is constituted also by other coordination mechanisms; in particular 'an appropriate framework of laws and institutions' (Smith, 1776), among which the regulation of property rights is central (North, 1981), and a set of 'conventions of quality' is of growing importance (Gomez, 1994)". (Grandori, 1997)

2011) [2]. In order to detect and evaluate *relative failures* -that result in underperforming forms of governance- efficiency and effectiveness in coordinating transactions need to be considered: markets have to rely on a price system that is transparent and carries full and truthful information; hierarchies or organizations need to incorporate all authority and agency relations in an explicit contractual form able to maximize employees' utility -material or immaterial (**?**) networks require formal or informal rules and practices coordinating transactions mainly through social mechanisms (trust, reciprocity, reputation, etc.).

The identification of factors characterizing governance functioning allows to detect the main threats to its efficiency and effectiveness: ignorance and opportunism, labeled as *social conditions*. Abandoning the conception of the criticized Williamsonian under-socialized actor (Granovetter, 1985), social conditions are recognized as characterizing all economic transactions, with no distinction between different modes of governance. As stated by Schrank and Whitford (2011) "absent ignorance (i.e., bounded rationality), complete contracting would be unproblematic; and absent opportunism (i.e., self-interested behavior with guile), contracts would be unnecessary". *Ignorance* refers to (honest) competency shortfalls, inability to align firms' strategies, to solve a joint problem mainly due to lack of skills or technical capacity. *Opportunism* can be defined as a behavior arising when partners do not have trust and loyalty to each other, and in contexts in which norms of reciprocity and good faith do not characterize social interactions. Ignorance and opportunism are identified as two possible sources of failure, in what they can influence transactions through social relationships' functionality.

Network failure has suffered a lack of attention from sociology and organizational theory, if compared to markets and hierarchies. As Podolny and Page (1998) pointed out, scant attention has been devoted to network failures, since in the last years sociology and organizational studies dedicated their interest mainly to network advantages rather than its dysfunctionalities or problems. The few available studies on network failure were mostly focused on the analysis of contested networks and devolutions, namely those types of failure empirically more traceable, evident and documented (Arino and de la Torre, 1998; Human and Provan, 2000; Uzzi, 1997). Notwithstanding the presence of these empirical contributions, very little effort in explicitly theorizing such failures has been done (Podolny and Page, 1998). In the work of Schrank and Whitford (2011) it is possible to find a first comprehensive conceptual framework, in which ignorance and opportunism are treated as distinct threats to network governance. On these two variables, a typology of network failures is proposed and hypotheses about plausible causes of absolute as well as relative failures are formulated.

The level of analysis adopted, even if not explicitly, is that of unitary actors: members of networks are taken as unique blocks, among whom transactions and cooperative relationships

[2] Granovetter (1985) criticizes Williamson (1975) for a similar approach to the "prediction" of optimal forms of governance: he prefers to adopt a lighter definition writing about "pressures" towards a form of governance, "to avoid the functionalism implicit in Williamson's assumption that whatever organizational form is most efficient, will be the one observed" (Granovetter, 1985, p. 503).

can be menaced by ignorance or opportunism or both. This approach is typical of traditional methodologies belonging to theories of network governance that interpret networks as ties and nodes, without exploring multiple-layer dynamics: inter-firm interactions are the result of firms' univocal will, action, choice. But as the invoked "practice turn" in strategy research suggests (Whittington, 2006), understanding not only *what is done*, but also *how it is done*, requires close anthropological attention (De Certeau, 1984). In fact, firms' actions are shaped by a complex intra-organizational game of bargaining, in which individuals negotiate "the constraints handed down to them through a constant stream of tricks, stratagems and manoeuvres" (Whittington, 2006). Each firm has to be interpreted as a pulsing and vibrant system of creative actors, with their own vision of the world through which they will interpret organizational practices (Bourdieu, 1990). By suggesting that a developing theory of network failure needs to take into consideration multiple-layer dynamics, we agree with the "*pragmatism and practice* approach, that eschews mechanistic understandings of action in which actors simply select the best means to a given end, but that does not eschew an understanding of actors as essentially rational and choosing" (Zirpoli and Whitford, 2012). From a pragmatist point of view, the object of analysis needs to have a two-way relationship with the developing theory, thus abandoning theoretical a priori determination of best ends (Gross, 2009) and allowing theory building from the actual observation of organizational processes "for the clarification of ambiguous ends through the exploration of means, and vice versa" (Whitford, 2002).

Since in networks the layer of individuals' action is tied to inter-firm interaction level to the extent that firms' actions are driven and influenced by individuals or sub-groups' movements (Whitford and Zirpoli, 2009), the theory of network failure cannot exempt to take into consideration multiple levels of analysis: this poses the issue of *granularity*. Changing the level of analysis and unpacking the blocks can be necessary to understand some peculiar network dynamics which can drive network evolution towards success as well as failure. As recently highlighted by literature of network governance, the internal organization of networks' members can substantially influence their ability to develop and sustain inter-organizational relationships, and how formal and informal patterns of relationships (intra- and inter-"blocks") can play a relevant role in shaping network's goals and behavioral patterns (Helper et al., 2000; Whitford and Zirpoli, 2009). The potential presence of multiple layers of social interactions -from formal network's lines of communication to informal ties among firms' workers- opens to complex interactions among inter-firm mobilizing processes, which in turn increases the relevance of inter-organizational politics. Interpreting network organizations as political coalitions (Whitford and Zirpoli, 2009) sheds light on the underlying mechanisms that can drive network evolution towards successes or failures. The starting point is March's understanding of firms as "conflict systems" (March, 1962), in which the identification of conflicting elementary units draws the attention to the granularity issue. As March pointed out, in fact, "the point of

view of the postulates of conflict is the extent to which the elementary units in one study are the conflict systems of another" (March, 1962). Thus, following the assumption of consistent basic units, the invitation is that of going beyond the formal blocks of organizations and find actual patterns of interaction, mobilization and demands. In order to understand and analyze the evolving paths of larger macro-systems, it is necessary to consider "the complexities of interaction between the resolution of conflict within the subsystems and the resolution of conflict within the larger system" (March, 1962). Subsystems, in this view, have to be identified following two criteria: demands they place on the larger system are independent from its decisions; conflicts within the subsystems cannot influence larger-system behavior due to scale differences between intra- and inter-subsystems conflicts. This framework is particular relevant in network contexts in which firms' boundaries are crossed by both formal and informal ties and organizations are embedded in multiple-layers relationships. The identification of subsystems, in these cases, cannot be limited by organizational boundaries since demands and resolution of conflicts can cross those boundaries. In the work by Whitford and Zirpoli (2009), these dynamics are found in the case of Fiat-auto production network through which they demonstrated how the ability of some actors to achieve their goals depend not only on actors in their organization, but also on actors belonging to other organizations. The interpretation of a network organization as a political coalition highlighted how cross-firms coalitions were able to influence decisions of the larger system, thus driving network evolution.

In understanding such political processes, we follow the general growing interest of organization studies in theories of organizational politics and social movements (Kaplan, 2008; Whitford and Zirpoli, 2009; Zald, 2008). Organizational research has explored the connection between politics and cognition, underscoring how cognitive frames -which are able to influence strategy and affect firms' outcomes (Porac and Thomas, 2002), can be object of political processes which can determine predominant frames and influence the strategy making itself. In this context, social movement research allows to frame the connection between politics and cognition, and to focus on the process of *mobilizing* organizational resources in order to "shape the frames of the others" (Kaplan, 2008). Cognitive frames are here defined as "schemata of interpretation" (Goffman, 1986) which allow actors to make sense of uncertain contexts. Frames shape how individuals see the world, their preferences and perceptions of their own interests. In strategy-making processes cognitive frames influence managers' interpretation of the outside world on the basis of which they will direct organizational action. Politics concerns arise when environmental conditions create opportunities to some actors to purposefully attempt to impose their frames to the others, through mobilization processes aimed at legitimating the frame as the most accepted. Through the "frame alignment processes" (Snow et al., 1986) coalitions group around powerful frames which will compete in the orientation and guiding of collective organizational action (Kaplan, 2008).

In this paper we want to show how such framing dynamics between inter-organizational

political coalitions can contribute to network failure. We base our empirical investigation on a peculiar case of contested network: the case of the Venice Film Festival and its local hospitality system. Interpreting our network as a political coalition is showed to be a necessary step to understand network's failure paths, which cannot be explained through the merely consideration of the interplay between ignorance and opportunism. This work wants to contribute to the conceptual framework of network failure adding granularity concerns: the identification of elementary units of analysis sheds further light on potential causes of failure, allowing to change the level of analysis and to unfold organizational blocks.

2.4 Methods and Data

The main research question of this work is related to the path leading to network failure, with particular attention to the causes of this result. Our intent is to develop an exploratory case study useful to extend the existing conceptual framework of network failure (Pratt, 2009). Moreover, the research here developed also attempt to extend the theory, providing evidence that the existing framework do not suffice to answer to our research question: as argued by Siggelkow (2007), cases can be used to highlight that "there might be something missing in the theory, motivating further research and justifying more refined conceptualization". Eisenhardt and Graebner (2007) underlined that in qualitative research, case studies can be sampled "for theoretical reasons, such as revelation of an unusual phenomenon [...] and elaboration of the emergent theory", and this is exactly the spirit with which we approached the study of the present case. Our narrative is built on triangulated data coming from a review of the Venice Film Festival's archives (official documents, formal and informal correspondence, reports, etc. from 1967 to 1983), a ten-years press review of national and international newspapers and specialized magazines (a total of about 600 articles were selected and analyzed), in-depth interviews with key stakeholders (a total of 18 semi-structured interviews lasting one hour on average, details of interviewees in table 2.3 in the appendix) and ethnographic techniques (Van Maanen, 1979) in formal meetings among the stakeholders (2 meetings of about 2 hours each, details in table 2.4 in the appendix). A more detailed account of data sources is provided by table 2.2 in the appendix. Version 8 of NVivo has been used as a helpful tool for organizing the data but most of the analysis was carried out manually using a coding process partly based on a priori determined variables, partly making relevant themes emerge (Marshall, 2002). We developed our analysis focusing on the building blocks of our theoretical frameworks: environmental conditions, social conditions, cognitive frames, and organizational politics. Our attention was also dedicated to evidence of actors' interpretation schemata, namely their beliefs and understandings that led to specific expectations with respect to the cooperation problem (Whitford and Zirpoli, 2009). We coded all our documents through a selection of 22 variables, described in table 2.5 in the appendix. In-depth interviews and ethnography were

fundamental for the observation of a particular moment of the network history: the formal attempt to coordinate activities in the occasion of the 68th VFF. In agreement with the view that organizations can be understood through the day-to-day practices and interactions of actors (Goffman, 1986; Kaplan, 2008; Zirpoli and Whitford, 2012), we focused on cognitive frames actors used to interpret the problem and to take decisions about cooperation.

2.5 Research Setting - The failing network

The research is based on evidence of the story of failed attempts to solve coordination and cooperation problems trough network governance between the Biennale organization (VFF) and the local hospitality system (HS) in the city of Venice, that we refer to as the macro-system under investigation (March, 1962).

The Biennale Foundation is one of the oldest cultural institutions in the city of Venice, and at the same time, one of the most prestigious cultural institutions worldwide. Born in 1895 with the first International Contemporary Arts Exposition, it presents a fruitful history of cultural productions of international relevance, in the fields of contemporary art, architecture, films, dance and theatre. In 1930 the Biennale (at that moment a completely public organization but with a high level of managerial autonomy - "Ente Autonomo la Biennale di Venezia") started its music branch, and two years later, in 1932, it held the first Film Festival in the world, the Mostra Internazionale d'Arte Cinematografica (VFF), created by the will of Earl Volpi, president of the Biennale. The first edition of the VVF, in 1932, was hosted by the Hotel Excelsior, at the Lido (the biggest island of the city of Venice). In 1937 the Festival moved to the brand-new Palazzo del Cinema of the Lido, where it remained until present days. The legal structure of the Biennale foundation, along all its history, changed two times: from a completely public organization, in 1998 it turned into a mixed public-private institution (Company of Culture) and in 2004 it became a private Foundation publicly funded (the vice-president of the board of directors is the Mayor of Venice, by statute of the institution). The Cinema Department (one of the three constituting the foundation) is governed by a managerial director, who works in coordination with the artistic director. We define the VFF as one subsystem composing the macro-system.

The HS counts 403 hotels: 17 hotels belong to the five stars and five stars Luxury category, 98 are four stars hotels, 174 are three stars hotels, and all the remaining are distributed among the lower categories. The system is spread over three areas of the city of Venice, significantly divided by the geographical conformation of the territory and its logistics: the historical center, the mainland of Mestre and the Lido island. Hotels are represented by three associations, that we consider as three distinct subsystems (pseudonymously dubbed X, Y and Z): X gathers almost all the big and higher-category hotels, Y groups the larger part of the hotels of the three areas, Z is a smaller and recently created group of hotels mainly located in the Lido

island.

Virtuous interrelationships among the four subsystems would be the starting point for value creation processes for the tourism destination as a whole (Novelli et al., 2006). Research on tourism destination management highlighted how network governance would be that amenable in the first place given the numerous extant interdependencies among tourism organizations: "From its long chain of distribution system to its fragmented supply components, the tourism field is, by its very nature, dependent upon inter-organizational relations to achieve organizational and regional goals" (Selin and Beason, 1991). Resource dependencies and complementarities typically characterize the complex tourism product, composed by many different pieces of the puzzle of the tourism experience, and typically controlled or owned by different firms (hospitality, cultural event, transportation, etc.). From this structural dependence comes the acknowledgment of the relevance of the network form of organization for achieving strategic leverage (Pavlovich, 2003; Ritchie and Crouch, 2003), in terms of firms' innovation (Sundbo et al., 2007) and destination marketing (Heath and Wall, 1992).

Complex interdependencies are the variable making our research context amenable to network governance in the first place. *Interdependencies* come, first of all, from the complementarity (Milgrom and Roberts, 1995; Siggelkow, 2001) between the Festival and the hospitality system: the cultural experience, represented at its core by the Festival, is completed and sustained in the first place by the hospitality system, as well as by all the complementary services its visitors require (transportation, restaurants, etc.). On the other side, the presence of such an important event in the city of Venice puts the hospitality system under a pressure of incomings and media coverage that would not exist if not for the Festival, making the cultural event an important complement to its offer.

Complementarities are acknowledged both by key-players and external observers. Our results show evidence describing the structural complementarity between the subsystems, focusing on the positive returns they might have from others' good performance. From hotels' point of view, the presence of the VFF is fundamental both for their destination's image and direct profits from occupancy rates: as, for example, demonstrates the article in the Financial Times in 2002:

"A good balance of arts and entertainment to transform an Adriatic beach, for twelve days, in the most important cinematographic center of the world",

or by the local press in 2010,

"Hotels occupancy rates close to 100% for the 10 days of the Festival".

On the other side, for the VFF, high-quality accommodation services are a key variable for the overall perceived quality of the event, as stated by its director:

"We need to offer to our subscribers adequate services (accommodation services, Ed.) at special conditions. [...] We need qualitative standards to be respected".

The VFF's audience is composed mainly by two categories: professionals from the inter-

national movie industry (actors, directors, producers, distributors, etc.) and the international press (around 3500 journalists, 40% foreigners). Peculiarities of exigencies of the VFF's audience increase the interdependencies between subsystems, as privacy and services are of central importance:

"Are you a superstar and wants to stay quiet during the festival? Refuge from the Festival's clamor is the Hotel X the right place for the international public who wants to keep his privacy" (National Press, 2009);

"We need hotels to serve late dinners (until 2 a.m.) for late projections, and we need hotels to serve late breakfast, for journalists who work until 4 a.m." (VFF manager).

Such a complex environment is, by definition, even more difficult to govern and coordinate, and despite the subsystems' awareness of mutual interdependencies, a network form of governance did not emerge: as the long lasting history of the macro-system witnesses, its evolution is punctuated by a series of failed attempts of building collaborative inter-relationships. First evidence of collaborative agreements between the VFF and Y dates back to the late 1960s:

"We are confident that this respectful Institution will want to appreciate the effort of Lido hotels to maintain the engagement in keeping unchanged the special prices for the Venice Film Festival, prices that are almost the same since 1964, despite the well-known general, sensible increasing in costs registered from then on." (Personal Correspondence VFF's director)

Archival data show some examples of interactions of this kind until early 1980s, in which the ground for cooperation was mainly that of hotels' prices and reservations. In these cases the VFF had direct relationships both with associations and single firms that sometimes directly negotiated rates with the VFF's director. The last 30 years have been characterized by difficult relationships among the subsystems, as the VFF's director reports:

"We could talk of relationships' micro-breaks. A global break never happened. We had always have a dialogue, a dialogue that still lasts. But there are some cases of entrepreneurs that decided to collaborate every other year. Some firms some years worked more with us, some other years less. Someone was satisfied, someone else was not. The same can be said for us."

But the unsolved -complex- coordination problem between the VFF and HS is not without consequences. The detrimental effect of the lack of a network form of governance in favor of spot and single agreements is well summarized by the article published in 2002 by Variety -a top specialist magazine for the movie industry and film festivals:

"[...] Shouldn't the oldest and arguably most prestigious film festival in the world be running like a well-oiled machine at this point –even though it's in Italy? To be blunt, it's not. From an organizational point of view, it's a creaky mass of disconnected parts. [...]The fest has no real center, and there's no linkage between press operations, hospitality, programming, protocol and the grossly overpriced and under-accommodating hotels on the Lido."

Given the macro-system awareness of the threat represented by such negative publicity,

and the consequent value destruction for all subsystems (as well as for the destination as a whole), in the occasion of the 68th VFF a formal attempt to build some kind of coordination was made by the local administration, in agreement with the VFF. About five months before the event two meetings were organized by the local government, who invited all directors of the four subsystems (the authors of the present work participated as invited external observers). Although they were able to agree on a common program of shared activities (namely offering specific services asked by the Festival's audience, such as late breakfast and dinner, fast and free Internet wireless connection, an information desk for the Festival, a TV tuned on the VFF's channel, etc.), eventually only few firms of the HS were willing to follow indications about collaborative activities to pursue, resulting in a scattered -and thus less effective- collaborative system. The president of the local administration commented as follows:

"We asked four weeks ago to send the proposals to the VFF, and only few answered. Something is changing, there have been some offers, farther hotels offer a free transportation service, some yes some no, but... Maybe the Associations should help."

Our data depict a scenario of a macro-system characterized by complex interdependencies, where the network form of governance would be that amenable in the first place from the value-creation point of view. Given the absence of any form of formal or informal comprehensive network, we claim that this is an example of network failure and, more precisely, of a contested network. Events verified in the occasion of the 68th VFF give even more credit to our claim: the formal attempt to solve coordination and cooperation problems through network form of organization made by the local administration resulted in not relevant changes, and failure still persists. The anatomy of network failure (Schrank and Whitford, 2011) suggests that contested networks are characterized by two simultaneous conditions: high opportunism within the network and low ignorance and competency shortfalls between network players. The following analysis of the macro-system's interrelationships will show that investigating these dimensions cannot explain patterns to failure, and thus we argue that the conceptual framework of network failure needs to be extended.

2.6 The macro-system's interrelationships

In our search for causes of network failure, consideration of the main traits of the macro-system's interrelationships is a first necessary step. Understanding *how things are done* requires the close investigation of interactions among the subsystems, in order to draw a more precise picture of the present structure of the network. We focus our analysis on three dimensions of interrelationships, that can be premises of patterns to failure: embeddedness (Granovetter, 1985; Uzzi, 1997), ignorance and opportunism (Schrank and Whitford, 2011). A detailed account of the coding process of the three variables, is provided by table 2.5 in the appendix.

Embedded relationships are defined as close or special relationships between interacting agents, namely those interactions "distinguished by personal nature of the business relationship" (Uzzi, 1997) which address agents' preferences for transacting with individuals of known reputation (Granovetter, 1985). Our context, given also its geographical closeness, is characterized by a thick network of personal interrelationships. As the VFF's director says:

"We had very good relationships with that association (X, Ed.) which managed best Lido's hotels for the last fifteen years. [...] We continued working with the association even when it did not have the Lido's hotels anymore (2009, Ed.)".

Also from the associations' point of view personal ties are extremely important for interactions:

"I don't even know who was the former manager. With Mr. B (Biennale's manager, Ed.) you can discuss, you can reason very well, he is a person who looks for team play" (Y director).

Personal ties emerge to be relevant not only at the higher level of the systems, namely among managers and directors of the VFF and associations, but also at a lower level of analysis. In fact, interrelationships between the VFF and single hotels are developed as well:

"We have always talked with local structures, but not all of them" (VFF director);

"I work with them (the VFF, Ed.), but maybe they do not work with all the others. But whoever they work with, the relationship is managed fairly and correctly" (Hotel V, manager).

Evidence of embedded relationships is significant, as our results show how the social relations were mostly referred to as the optimal coordination mechanism for the system and words most frequently used were (in order): *relationship/relationships, dialogue, system, cooperation, and coordination.*

Ignorance and competency shortfalls result in situations characterized by low exchange of relevant information by network's members and scarce knowledge about partners' competencies, resources, abilities and strategies. Failure can be provoked both by objective difficulties in the evolution of cooperation due to lack of salient information and by preventing the recognition of innovation opportunities. Instances of these outcomes are described by the literature as cognitive lock-ins, as networks develop group-thinking schemata which inhibit innovation processes (Grabher, 1993; McEvily and Marcus, 2005; Sabel, 1996). In our context ignorance and competency shortfalls would lie in the inability of interacting agents (VFF, X, Y, Z) to recognize the opportunities of collaboration on the one side, and in the lack of salient information about others' resources or competencies to develop such collaborations.

If ignorance was an actual source of failure, we would expect to find individuals unaware of potential value coming from collaborations, and in case of existence of a competency shortfalls' issue, we would expect to find them unaware of possible dimensions on which collaboration could be advantageously developed. Evidence tells a fairly different story. Collaboration is not only acknowledged as a potential way to create value by all the macro-system members' representatives, but it is also described as *desirable, advantageous, advisable.* Moreover, talking

about potentialities of collaborations, all directors showed a deep and extensive knowledge about other members' strategies, pointing to potential grounds of collaboration particularly suitable for reciprocal value creation. As, for example, stated by an association director:

"When there is an international event like this, we cannot present ourselves as a village festival. We cannot have beautiful initiatives as single entrepreneurs, and not having a central coordination: if it lacks, we will lack in style. [...] When there are things important like this, the direction have to be common".

Data show that the HS knows fairly well which is the main ground of common interest between them and the VFF: high-quality services and flexibility on the one side, international resonance and visibility on the other. Awareness of the impossibility to reach the same results without a network coordination is also evident:

"All associations have to participate, [...] the system must have a positive relationship, proactive and elastic" (Z director).

On the other side, the VFF is equally aware both of the relevance of cooperation and coordination with the HS, and of the available ways to do it:

"Since the last years we have been trying to follow with particular care a series of relationships as continuative and coordinate as possible with the hospitality system" (VFF director).

Results provide significant evidence against the presence of ignorance or competency shortfalls among network's members (from interviews and press review), thus the macro-system results characterized by a low level of both.

Opportunism is typical of those situations in which members do not perceive trust, loyalty and reciprocal confidence towards the others. Suffering a paucity of confidence can lead networks to failure because of unsolved concerns as appropriability, exchange of relevant knowledge and joint problem solving (Helper et al., 2000; Whitford, 2005). Opportunism is considered as a potential cause of network failure if its presence inhibits cooperative behavior because of network members' perceived risk of being exploited by opportunistic partners (Brusco, 2008).

We argue that this is not the case for two main reasons: all directors express themselves in non-opportunistic ways and several instances of collaborative practices, left to individual initiatives, are available. Evidence shows how reciprocal trust and absence of high levels of opportunism characterize relationships among the subsystems, as they report of long-lasting dialogue, recognition of others' fairness and willingness to build cooperative relationships:

"The VFF has always demonstrated to be willing to discuss and to find the most important points for collaborating with the Lido island" (Z director).

"It has to be said that the VFF has never had big demands, they never asked anything but they did a lot for the city" (Y director).

"We always had a dialogue (with the Associations, Ed.), a dialogue which still lasts. There could be some single cases of operators who decided to cooperate some years, and some others

do not." (VFF manager).

"The most strategic aspect is that of collaborations at 360°, because we are extremely willing to cooperate with the VFF and with the Biennale organization in general" (X director).

Besides results coming from in-depth interviews, instances of low opportunism are available from the press review. Articles described individual initiatives which attracted some attention for their relevance:

"At Lido, you can find accommodation rates that did not undergo an increase" (National press, 2002);

"In some cases prices have been stable for five years, and are lower than Cannes"'(National press, 2003);

"Some hotels gave, for the first time, suites and rooms at agreed prices to the VFF, as hotels in Cannes did for years" (National Press, 2009);

"Rates are equal to the last years, and there has been an increase of quality: higher comfort, better quality, faster and more stable internet connections are now available for accrediteds" (National press, 2009).

Moreover, evidence coming from the direct observation of the organization of the 68th VFF, reports of hotels which offered private transportation services to the Palazzo del Cinema, and of others which prepared information desks for the VFF's visitors, etc.

A not negligible number of data report also instances of opportunistic behaviors adopted by single firms. Data come mostly from press review, where it was given a lot of space to polemical debate about Venetian prices (not only Lido hotels, but also restaurants, bars and transportations are generally criticized). Apart from sterile arguments, data underscore the presence of some instances of opportunistic behaviors identifiable in few isolated cases. As an example, the HS was accused of opportunism when in 2010 a single Lido hotel charged a journalist 15 Euros per day for the internet usage. Or when, the same year, rained into a pension's room paid more than 100 Euros. The fact that these few examples had such an extensive negative resonance, makes us conclude that opportunism is not a common behavior, but that the negative impact of few free-riders on the whole system renders even more important to achieve a systemic coordination towards collaboration -highlighting again the detrimental effect of the absence of a network form of governance. Data point to the fact that opportunism seems not to characterize the macro-system by itself, since coordinators trust each other and also the hospitality base is, to some extent, willing to adopt collaborative behaviors. Given these results, we argue that opportunism cannot be considered the main cause of network failure, in view of the fact that the system does not manifestly suffer a paucity of trust.

The macro-system's interrelationships analysis returns somehow puzzling results: interrelationships between subsystems turn out to be highly socially embedded and characterized by such levels of ignorance, competency shortfalls or opportunism that cannot justify the failing

contested network. But then, why does this macro-system fail to build a network form of governance? We argue that considering ignorance and opportunism between the sub-systems do not provide the answer to our question. Data brought us to deem the extension of the theory of network failure to considerations of organizational politics and social movements, putting us in front of emergent theory (Eisenhardt and Graebner, 2007).

2.7 Mobilizing, Framing and Political Coalitions: the Failing Dynamics

In the previous sections we reported considerable evidence of network failure within our research setting: for years, attempts to solve coordination and cooperation problems through network governance have been made, until the very last evidence of a formal tentative to build a network form of governance for the 68th edition of the festival, that failed as well. We start the investigation of causes of failure right from this very last experience: under a pragmatist approach, the observation of actual organizational processes allows for theory to emerge (Whitford, 2002).

An important result of the second -and last- meeting of the macro-system representatives was the general agreement on the potential common ground of interest for cooperation. The agreement was reached after a collective discussion, which ruled out those issues considered by all participants the most thorny ones -such as that of special rates for rooms of VFF's guests. Thus, the proposal for collaborative inter-relationships was built in a way that was considered the easiest to accept by all hotels, a kind of middle ground that could convince all.

What happened next, was that each association's director *could not persuade* other members to cooperate with the VFF on the collectively designated lines, at least in a comprehensive and systemic way. We interpret this event through the lens of political coalitions that sees organizations as conflict systems, in which the decision-maker is a political broker, and the composition of the organization as well as collective goals are not given, but bargained (March, 1962). The process of mobilizing associations' members towards that specific frame of collective collaboration with the VFF, somehow *failed*. Directors' explain the facts as follows:

"If you ask them (association's members, Ed.) something, it is not something due. Why should they agree with you[...]?" (Y's director)

"It often happens that the director comes to the meetings -roundtables for specific initiatives- and then the communication [within the association] isn't.. isn't really positive. Thus someone, maybe the more dry branches, does not agree with the conclusions or the choices made by the association, and doesn't follow the guidelines, damaging the whole group."(Z's director)

What was needed, within each association, was a virtuous process of *framing alignment*, namely to link different members' interests and interpretative frames (Benford and Snow, 2000), thus mobilizing adherents towards a common interpretation and solution to the prob-

lem. These dynamics are acknowledged by the literature to be, at least to some extent, contested processes (Kaplan, 2008; Ryan, 1991). Within each association, different visions (frames, "schemata of interpretation" (Goffman, 1974, 1986) about cooperative relationships with the VFF emerge:

"At a certain point arose probably a more pronounced diversity in visions." (Hotel G's manager)

"I had some difficulties in debating some particular issues (within the association, Ed.), the confrontation at the meetings was problematic. [...] We have very different problems, thus, since it was allowed, I subscribed for two different associations"(Hotel M's manager)

"At the basis [of divisions] there is a difference in visions." (Hotel P's manager)

Local Administrators, as external observers, acknowledge the same situation:

"I don't know exactly the reasons (of failure, Ed.), maybe there aren't the capabilities, maybe the offer is highly differentiated[...]. Probably, it is very difficult to align so different needs."(Local Administration)

These differences in visions and needs, recalled by several interviewees, highlight the presence of different frames within the HS. Hotel managers and associations' directors have diverse cognitive frames about the direction the market is taking and about what kind of solutions would be appropriate (Kaplan, 2008).

Two distinct cognitive frames about the solution of the coordination problem with the VFF arise, whose main traits emerge from interviews and press review: on the one side, there is the will of building a form of *"contractual collaborations"* with the VFF, having formal agreements on commercial issues and formalizing contracts of exclusivity as a concrete sign of commitment by the VFF; on the other side, it is the idea of *"cooperative relationships"* as the best form of interaction, under which lies the belief that the VFF is a kind of "public good" from which the whole HS (as the whole city itself) benefit, and thus all firms have to commit themselves towards high standards of quality, widespread communication of the event and specifically arranged services. Major differences in the interpretation of the environment, and in its translation into collaborative attitudes, can be found along five dimensions, namely in how players generally interpret the *relationship* between the VFF and the HS, in how the mutual *interdependence* unbalance the bargaining power, in the *expectations* about the actual partner's collaborative choices, in the *incentives* that would sustain cooperation and, finally, in the possible *coordination* mechanisms useful to govern the network.

Agents showing an interpretation of the environment akin to the first frame (closer to an interpretation of market coordination), talk about a power relation between the VFF and HS in which the latter keeps most of the force since the interdependence is interpreted more unbalanced in its favor. That is to say that the HS lives also without the VFF, but the contrary is not true. From this point of view, they expect the relationship to be built on explicit and specific criteria, in order to encounter HS' exigencies. Possible incentives to develop a

collaborative agreement, with consequent required innovation efforts on both sides, would be the assurance of exclusivity of benefits coming from collaborations -typically, image returns- against potential free-riders. As a consequence, the best coordination arrangement would be an exclusive formal (and mid-term) agreement between the parties, where the interlocutor for the HS is identified in most of the cases with the association.

The second schema of interpretation (closer to an interpretation of network coordination) is attributed to those agents talking about a balanced relationship between the HS and VFF, or even more frequently, about a grateful attitude of the HS towards the VFF for its widespread economic returns that benefit the whole city of Venice. The interdependency relation, from their point of view, is unbalanced in favor of the VFF, since a significant part of the HS' annual revenues depends on the event. For an effective cooperative relationship, they would expect to work together with the VFF organization, in order to mutually take into account specific needs and exigencies: thus, their incentives to embark onto a cooperative agreement would be to be sure of the reciprocal willingness to build coordinate actions and to be addressed towards the most relevant and profitable ways of innovation. Consequently, the optimal form of coordination is identified with a more social form of exchange of information, ideas, and long-term visions.

Table 2.1 shows the specific traits of the two frames, both present not only among different associations, but also within the same organization[3].

	Frame 1: **Contractual Collaboration**	**Frame 2:** **Cooperative Relationship**
Relationship	"The VFF strongly needs the HS. Thus they have to look for a positive relationship with local hotels."	"In my opinion, in agreement with other colleagues, it is necessary that the HS give something more, yield more. The VFF has always contributed significantly, and now the problems are the same for everyone."
Interdependence	"The aim is clear: we (association) commit ourselves to give you what you cannot get from single hotels, and you (VFF), in turn, acknowledge our presence, both in operational and image terms."	"Thus there is, there exists, a positive relationship, since the VFF attracts every year hundreds and thousands of people, tourists, professionals, journalists to Venice."

[3]Quotes are reported without their sources for the confidential nature of data and for the sensitivity of the matter, even if their origins were taken into account during the analysis. The authors believe that preserving confidentiality about these data do not affect the effectiveness of their interpretation.

Expectations	"There is the need of a comprehensive relationship with the association, because the VFF have to commit itself to manage this relationships following specific criteria, starting from the vexata quaestio of the payment terms."	"If the attractive elements of the Festival are distributed over an extended period, if the average duration of staying is longer thanks to a more interesting program, surely the HS will be happy to collaborate on several issues, knowing that the VFF has to pay attention to costs and resources."
Incentives	"It is straightforward that the VFF has to make an effort, namely to acknowledge a unique interlocutor, because otherwise the association cannot bear other efforts, especially economic ones. If there is a project to finance, aimed at increasing hotels quality for example, we can invest, but in turn the VFF has to give something back, the recognition of our association as a unique institutional partner for accommodation services."	"For this reason we need to be coordinated: we have not only to collaborate, but we have to decide together which services are really necessary. Because sometimes there are some things that are really essential, but we cannot expect economic returns from them."
Coordination	"A framework for which we defined some terms on which we were willing to cooperate with the VFF, but it has to be at least biennial. It is a way to say 'Let's not pursue always micro-negotiations, but let's work on a medium-term program'."	"The VFF should dialogue with the associations which are its goals, its values, sharing the potential ways along which we can follow them."

Table 2.1: List of main traits of the two competing cognitive frames about collaborative relationships

Our main point, besides the specific traits of these two frames characterizing our macro-system, is the fact that the frames about a strategic choice as the form of collaboration to activate between the VFF and the HS, were not congruent within each sub-system. As claimed by Kaplan (2008), when this happens, actors may engage "in highly political framing practices to make their frames resonate and to mobilize action in their favor". Even more relevant is the fact that these mobilizing practices, aimed at sustaining one frame or the other, can follow "patterns of mobilization distinct from both lines of formal authority and the personal ties of informal organization" (Clemens, 2005). Evidence shows how the macro-system is characterized by the presence of cross-firm coalitions (Whitford and Zirpoli, 2009), which engage in mobilizing practices outside the boundaries of each subsystem. The recurrent pattern showed by data is the transversal (with respect to subsystems) interaction among agents with similar frames, that try to act in their interest either signing agreements with the VFF outside formal lines, or boycotting them. Triangulated evidence in the press review (such as official claims of key-stakeholders) and interviews talks about different interests that

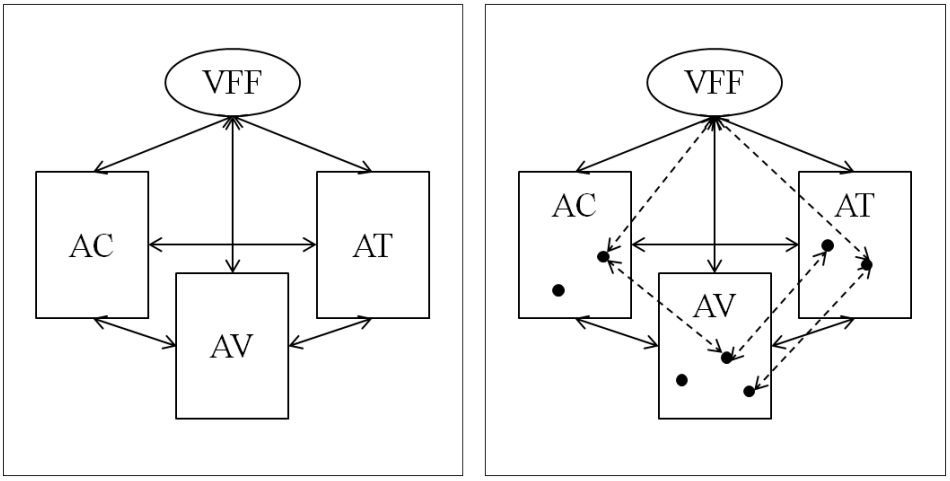

Figure 2.1: Formal lines of interaction and political coalitions development

are promoted in the shadows of official lines of communication. For example, asking about the interaction of the three associations with the VFF, hotel managers say:

"There are the bigger ones, the bigger hotels, that give different indications and prescriptions."

"We (hotels belonging to different associations, Ed.) have a different problem, thus we need different solutions, but with respect to other issues, maybe we have the same interests." "For example, me and Mr. Trader (belonging to different associations, Ed.) share the same problems, we know each other, we call for everything, we collaborate."

Associations' directors, namely decision-makers for what concerns the formalization of collective agreements for a network form of governance with the VFF, are also in charge of mobilizing adherents towards a common interpretation and solution to the problem. This process, we saw that failed, seems to face the challenge of solving a framing contest played across different grounds.

As depicted by figure 2.1, subsystems do not result as consistent basic units in developing interrelationships with the VFF, and then we cannot assert that "variation in system behavior due to conflict within the subsystem is trivial because of scale differences between the conflict within the subsystem on the one hand and conflict among subsystems on the other" (March, 1962). In agreement with this point of view, we can identify network's failing dynamics with problems of consistency of each subsystem.

In this same direction goes evidence on interviewees' perceptions about possible causes for network failure, in what they identify the lack of associations' *representativeness.*

"Since the last years we have been trying to follow with particular care a series of relationships as continuative and coordinate as possible with the hospitality system. In doing this, we are not supported by the local system that, differently from other cities - and differently from other international festival like Cannes, for example -, does not have category associations

representative, unique, and coordinated. Actually, there is still a profound division. There are many different hotels associations, not all representative of the reality of the hotels. This is a first element of important difficulty."(VFF's director)

"All the hotels belong to different associations, and it's impossible to have a single interlocutor." (VFF's manager)

"I believe it is not wrong to highlight the lack of representative associations: this would result in a better dialogue with the institutions -as Biennale-, in a higher service quality, in a easier communication, in general standards more uniform and thus easier to communicate also to customers." (Hotel G's manager)

"They (HS, Ed.) even talk about the will of building other associations. It would be a big mistake, because [...] they would only weaken the system, and it would be a war among weak ones instead of a war among strong ones." (Local Administrator)

The problem of representativeness is linked both to the size of associations (clearly because they are three instead of one unique representative of the whole HS) and their ability to effectively represent their associates' interests.

Political coalitions acting behind the scenes of formal lines of communication and interactions, result in an ineffective process of mobilization within each association towards a common idea of cooperation with the VFF. This seems to explain why the agreement between associations' directors and the VFF were not respected by the whole HS in the occasion of the 68th edition, as well as their long lasting history of failed attempts to build a network form of governance. The *unsolved framing contest* leaves cooperation in the hands of individual initiatives even if some collaborative paths are designed through the negotiation between the VFF and the associations, due to the impossibility of mobilizing adherents towards a collectively shared solution.

2.8 Discussion and Conclusion

In this work we told a story about a network that permanently failed to emerge, between the Venice Film Festival organization and its local Hospitality System. Despite the context would be amenable for a network form of governance in the first place, in fact, the macro-system has a long lasting history of failed attempts behind the shoulders. Understanding the actual causes of the presence of a contested network contributes both to the still underdeveloped theory of network failure, and to the little empirical research in this field. Theory of network failure, in fact, has suffered a lack of attention by sociologists and organizational scholars, who focused more on network functionalities than its problems or failures (Podolny and Page, 1998). On the other side, empirical evidence of network failures is still very few given the specific difficulties related to data gathering (Miles and Snow, 1992; Schrank and Whitford, 2011).

With our study we address an important methodological issue for studies of network governance in general, but here treated for our specific concerns of network failure: that of granularity. The traditional approach to the study of inter-organizational networks interprets them as systems of ties and nodes, without opening the black boxes and treating firms as unitary actors (Smith-Doerr and Powell, 2005). We took instead as our conceptual framework of reference March's interpretation of firms as political coalitions (March, 1962), which highlights how the behavior of the larger system could depend on the interactions among elementary units, the subsystems. More specifically, we refer to the understanding of networks as political coalitions, in which subsystems influencing the behavior of the larger system can even cross firms' boundaries (Whitford and Zirpoli, 2009). Thus, our claim is that opening the boxes and look inside nodes is a fundamental step to understand network's dynamics, that can in some cases lead to failure. We tried to demonstrate the necessity to extend the framework developed by Schrank and Whitford (2011) through the narrative of our case study.

The investigation of causes of network failure through the variables traditionally identified by the literature as the main threats to network functioning -ignorance and opportunism-, was not sufficient to explain and justify our case of contestation. The macro-system interrelationships, in fact, were demonstrated to be highly social embedded and displaying such levels of both ignorance and opportunism that could not justify a permanently failing network. A deeper analysis of relationships within and among subsystems highlighted the presence of cross-firms coalitions struggling for legitimizing their interpretation of collaborative relationships between the VFF and the HS. The unsolved framing contest (Kaplan, 2008; Ryan, 1991) results in a lack of representativeness of HS associations, which in turn cannot be the reference actors for solving coordination and cooperation problems through network governance.

Identifying the specificity of this failing dynamic would not be possible without the acknowledgment of cross-organizational mobilizing processes (Benford and Snow, 2000). The consideration of granularity issues, and the choice to explore inside the boxes represented by associations, allowed us to find a more plausible explanation for our case of contested network, without relying only on ignorance and opportunism considerations.

Besides methodological and theoretical implications, our study provides some organizational implications, that have necessarily some generalizability limitations. The identification of two different approaches and "schemata of interpretation" (Goffman, 1986) for the cooperation problem, sheds some light on possible solutions to the network failure. Differentiating between two available collaborative agreements, for example a *cooperative* one and a *contractual* one, would allow to have a self-selection of hotels distributing between the two possibilities, which will require different levels of effort in exchange of distinct levels of benefits. In this way, each sub-system, namely each association, would not be constrained in representing only one of the two possible interpretation of the network form, but they could coordinate members along two different lines of action. Our research is limited especially in the investigation of

specific traits of cognitive frames, thus we cannot provide more precise solutions to this failure example. Given that our main goal was to understand causes of failure, our study is focused on the dynamics that led to this result, but a certainly interesting future development would be the investigation of the framing contest, as well as the frames emergence and development.

We are convinced that the development of knowledge about network failure is still needed, both from a theoretical and empirical point of view. In particular, understanding the interplay between ignorance, opportunism and political considerations at different levels of network analysis, is an issue still unexplored. Other cases, providing further evidence of relative as well absolute failures, would be surely helpful not only in understanding causes, but also in developing useful formulas to try to prevent them.

2.9 Appendix

Sources	Description
Internal	
Interviews	
18, 18h10min	Interviews were developed from February to May 2011. All key-stakeholders of the macro-system were interviewed at least once. The majority of interviewees occupied their position at least for 10 years, thus being able to provide an historical perspective of the situation. All interviews have been recorded and typed.
Ethnography	
2, 3h15min	The two meetings to which the authors were invited to participate as external observers were held in March and April 2011. The meetings were hosted by the Lido Municipality. The meetings have been recorded and typed, and notes about participants' behaviors were taken.
External	
National Press	
2001-2011	All articles of the VFF national press review were analyzed. Articles about the relationships between the VFF and the HS have been selected. For 11 years of press review, from more than 5000 articles available, around 600 articles have been analyzed.
Observers	Articles containing opinions of third parties, external to the macro-systems, were classified as "observers". Evidence of the system's performance and perception of relationships is provided by this type of articles.
Macro-system	Articles reporting interviews or official declarations of the macro-system's members were classified as "macro-system". This evidence was mainly used to reconstruct the last 11 years history and to triangulate evidence from Internal sources.
International Press	
2001-2011	All articles of the VFF international press review were analyzed. Articles about the VFF performance, the HS performance, and their links, have been selected. For 11 years of press review, around 50 articles have been analyzed. Evidence for relationships success or failure was found, as well results about value detriment or increase from collaborations.
VFF Archival Data	
1967-1983	Data accessible from the VFF archives regard all official documents collected for each festival's organization. Contracts, applications, movies' papers, meetings' transcripts, official correspondence, etc. are available. Documents after 1983 are still secured. Data regarding official correspondence between the VFF and HS were analyzed, aiming at reconstructing the past history of their interrelationships.

Table 2.2: List of sources and brief description

Interviewees	#	**Duration**
Venice Film Festival		
Managerial Director	1	1h
Marketing Director	3	3h30min
Press Manager	1	1h10min
Local Government		
Tourism and Culture Counselor - City of Venice	1	1h
Vice-president - Lido Municipality	3	2h30min
Tourism and Culture Counselor - Lido Municipality	3	2h
Hospitality System		
AV Director - Venice	1	1h
AV Director - Lido	1	1h15min
AT Director	1	1h
AC Director	1	1h
Hotel Manager 1	1	1h30min
Hotel Manager 2	1	1h15min
Tot.	**18**	**18h10min**

Table 2.3: List and duration of interviews

	Organizers	**Participants**	**Duration**
1.	*Lido Municipality* Vice-president Tourism and Culture Counselor	*Hospitality System* AV Director - Lido AT Director AC Director Hotel Manager 1	1h 30min
2.	*Lido Municipality* Vice-president Tourism and Culture Counselor	*Hospitality System* AV Director - Lido AT Director AC Director Hotel Manager 1 *Venice Film Festival* Managerial Director	1h 45min

Table 2.4: List of participants and duration of observed meetings

Variable	Definition	Illustrative Quotes
ENVIRONMENTAL CONDITIONS		
Complementarity	Elements are complements if doing (more of) anyone of them increases the value to doing (more of) the others. (Milgrom and Roberts, 1995)	"Potential returns from collaborations are higher for everyone." "Visibility for the HS, and adequate standards for the VFF."
Interdependence - Demand Side	Interdependencies between the HS and VFF may arise from the consideration of specific exigencies of their customers/audience. Implications for their offer (operational but also in terms of quality and value) can come from interdependencies on the demand side. (March and Wilkinson, 2009)	"The VFF visitor is a different kind of tourist. Visitors are professionals, they need to send articles to their editors: instead of flowers in their rooms they prefer to have free high-speed wireless internet connections. They live in the hotel for few hours, most of their time is spent at the Festival. Projections begin early in the morning and end late in the night, they are different clients. They prefer a quick sandwich for lunch instead of big restaurants." "The Lido is a small island, and professionals, the industry workers, must stay close to the Festival."
Interdependence - Supply side	Structural interdependencies characterizing the VFF and the HS, in terms of mutual influence of their offer. (Miller, 1992)	"With the new qualitative levels of the VFF's structures, there is the need of accommodations respecting the same qualitative standards." "The problem is that the Festival is not accessible from the big audience. There is no room for accommodating all those tourists and prices are prohibitive. Venice cannot manage such an event because it is not prepared from a logistic point of view."
SOCIAL CONDITIONS		
Embeddedness	Close or special relationships characterized by the personal nature of the business relation. (Uzzi, 1997)	"As usual, personal relationships in this city are fundamental. The director and I knew each other for very long time, we esteem and respect each other. It is easier to communicate when there is a personal relationship: this is true worldwide, but even more in this city."

Trust	Trust is here defined along two dimensions: interpersonal trust, to refer to "the extent of a boundary-spanning agent's trust in her counterpart in the partner organization".	"They have always shown their willingness to dialogue and find the more purposeful points in order to keep the Festival at the Lido."
	Inter-organizational trust, defined as "the extent of trust placed in the partner organization by the members of a focal organization". (Zaheer et al., 1998)	"They never had big demands, they never asked anything, but they gave a lot."
Mistrust	Luck of trust or confidence. (Granovetter, 1985)	"When, at the end of the Festival, there were positive results, then 'well done to all', but if numbers were not so good, then it is all HS's fault, for their excessive prices or low quality."
Competence	Strategic alignment, skill, and technical capacity for developing network collaborations. (Das and Teng, 2001)	"My personal vision is that of improving the networking, at different levels: from the whole city, to the main stakeholders. We need to develop resources and competencies for being able to develop a confrontation over all tables."
		"When they disclose the program, we try to help each other: for example, if there is a projection ending at 1a.m., we anticipate that our customers, who are the same since 30 years, will need specific services."
Competency Shortfalls	Lack of capacity and skills as well as strategic alignment between potential partners. (Schrank and Whitford, 2011)	"If I am not pursuing high quality standard all over the year, and in two days I try to improvise, I will be at the risk of damage giving the wrong image: it is not a price problem, it is a value concern."
		"There is delay in developing a common strategic-thinking, for what concern the team-building, the presentation as a group."
Knowledge/Awareness	Ability to recognize the opportunities of collaboration; knowledge of salient information about potential partners' resources or competencies. (McEvily and Marcus, 2005)	"When there is an international event like this, we cannot present ourselves as a village festival. We cannot have beautiful initiatives as single entrepreneurs, and not having a central coordination: if it lacks, we will lack in style. [...] When there are things important like these, the direction has to be common".
		"If they need political rates for a pre-determined period, higher quality, free internet, we can discuss together."

		"Visibility for them, and high-quality standards for us."
Ignorance	Lack of knowledge and awareness. (Schrank and Whitford, 2011)	"The VFF lasts only two weeks. At the end, it has not such significant returns for the HS." "Sometimes I have to ask to my colleagues: this hotel to which association belongs? Because I do not know it. I know that symbols change, associations' names, and I even do not know to which association they belong to." "When do we know the movies? The stars who are coming? Is it possible to know everything only one month before the Festival, or should we know them well in advance, 6 months before?"
Trustworthiness/Non-Opportunism	Actions and behaviors witnessing the presence of reciprocity, good faith, confidence and loyalty. (Zaheer et al., 1998)	"When the VFF asks the hotels, in my opinion, should give. If they launch some ideas, many will be willing to answer." "Associations confirmed that prices have not been increased from last year and they tried also to measure the quality of the offers for accrediteds, with higher comforts and faster internet connections. Moreover, the VFF received some rooms at political rates, as it happens in Cannes."
Opportunism	Actions and behaviors mainly oriented to the exploitation of potential partners for self-interest goals. (Schrank and Whitford, 2011)	"I see things, more important, such as the prices increase, sometimes really exaggerated with respect to the others. Or sometimes the quality of rooms, that they would need to be refurbished." "They are so focused on their personal priorities that they cannot follow the complete picture of development." "Everyone looks only at his own personal interests, never looking at the whole system."
Coordination Mechanisms		
Artifacts	Networks relationships are developed reflecting the "modular" product architectures, in order to reduce uncertainty in contracting. (Langlois, 2002)	"We are an important reference for collaborations with the VFF because of our offer: we have an important size, in terms of number of rooms; we have diversified brands, thus an important credibility with international customers who know us; we are constant in our offer of products and services, which is an important value in terms of reliability."

		"Who wants to have a VFF-like accommodation, needs to have some specific features." "We have private motorboats to reach the VFF, and this is an important strength."
Relations	Networks are developed and governed through social relationships, which are the means through which resources are exchanged. (Uzzi, 1997)	"Since the last years we have been trying to follow with particular care a series of relationships as continuative and coordinate as possible with the HS." "We collaborate especially with these hotels, for many reasons but particularly because there has always been a long continuative relationship."
Techniques	Network forms of governance, their development, functioning and outcome, are the result of organizational techniques adopted to govern the exchange among partners.(Helper et al., 2000)	"Every year we talk together, we remind us reciprocal commitments, mutual loyalty, and every year there is something added or modified, depending on the activities and possible proposals." "Being all sit around a table help in coordinating and in solving a lot of problems."
POLITICS		
Coalitions	Presence of collectivities with interests or stakes in some organizational action, competing for mobilize the macro-system in accordance to their own demands. (March, 1962)	"There was a firm that did not want to participate to the initiative, that in my opinion was trivial. But maybe, from their point of view, it was meaningless. They answered negatively, so I asked to another firm belonging to a different association and we did it together." "Thus someone, maybe the more dry branches, does not agree with the conclusions or the choices made by the association, and doesn't follow the guidelines, damaging the whole group." "They want to create a sort of division, for their personal interests. It is unbelievable, but we cannot work all together."

Cognitive Frames	Cognitive frames are "schemata of interpretation," used by actors to make sense of ambiguous and varied signals. They shape how actors interpret their environment and perceive potential collaboration. (Goffman, 1986)	"Other colleagues and me that interpret the situation in the same way, we think that it is necessary to give something more, to yield more. The moment is difficult, and also the other counterpart is willing to cooperate."
		"From a systemic point of view, there is surely a big synergy."
		"We need to focus on the commercial aspects: we developed a framework defining possible collaborative actions. A program not for only one year, but at least biennial. It is a way to say: 'do not always run after macro-negotiations, but let's work on a medium-term program'."
Framing Contest	How actors attempt to transform their own cognitive frames into the macro-system's predominant collective frames through their interactions and mobilizing practices. (Kaplan, 2008)	"Everyone is aware that the rules have to be changed, it is necessary to work in another way. But there is still no agreement on how they should be changed."
		"I think that they tried this strategy especially to smooth the most distant positions."
		"Maybe since it has always been this way, some colleagues do not agree, because from historical reasons they expect a lot and are not willing to give much, for this event."
Mobilizing	Actors engage in framing practices in order to mobilize action in their favor, in order to establish legitimacy of their frames or to influence how others see issues. (Kaplan, 2008)	"In this respect, we are trying to build a mechanism for pushing not only individuals' activities, but those of all the council, and this is an important thing."
		"We have our channels, through which we can tell our associates: 'look, we are going to do this operation, you have to charge this rate, and so on'."

		"It is clear that we have to work following this path, but it is not easy to change the mentality of persons who have worked in this field, with this kind of event, for years. They never felt involved, so they are not easy to convince."
Representativeness	Firms' associations aim at representing members' interests, visions and frame. From their representativeness arise the issue or their effectiveness and efficacy.	"We are not favored in this respect because there not exists associations representative, unique and coordinate. There is still a profound division, actually. There are a lot of hotels associations, not all relevant and representative of the hotels reality." "Generally here there is an association significantly representative, and another... they are a kind of group of dissidents who had some arguments. The Lido is a kind of grotesque situation: there are 40 hotels represented by three associations. An association with less than 50 hotels cannot even afford a secretary's wage, it is ridiculous." "An association's effectiveness is not measured on the fact that it groups all the hotels, but when all members shared a vision and a way of thinking. We are in 10-12 , but we have already a lot of divisions and diversities."
COOPERATION OUTCOME		
Success	Positive returns coming from collective or individual collaborative initiatives.	"In the last editions of the Festivals there were some relationships: firms were collaborating, advising the Festival, and the Festival advised their activities." "This year we found a VFF more effective and hospitable."
Failure	Negative returns coming from the lack of collective or individual collaborative initiatives.	"Few days ago the national Culture counselor said 'if the Lido cannot adapt, we will move the Festival." "If Venice cannot act as a system, there will always be some tour operators able to get rock-bottom prices for rooms, that they sell at whatever they want, strangling entrepreneurs."

Table 2.5: List of variables analyzed

3 Does Sharing Values Lead to Cooperation? A Similarity-based Investigation

3.1 Abstract

Understanding what motivates and fosters collective actions has major implications in the governance and management of organizations, in the regulation and design of public policies, and has long attracted the interests of scholars and practitioners in business and economics. If trust and reciprocity certainly qualify as possible drivers of collective actions in some specific environments, as the uncertainty regarding the interaction structure increases, they are not likely to be able to explain the emergence of stable interacting groups in reality. This paper deals with how groups of agents emerge in a dynamic contest characterized by lack of formal structure and uncertainty regarding the possible individual outcomes. Through the development of a stylized agent-based model we aim to show how similarity in values can be a successful driver for cooperation. A second-version of the model, where memory of past interactions has a role, introduces further dynamics and is able to create successful and relatively stable groups.

Keywords: Similarity, Social trust, Cooperation, Groups[1].

[1]This chapter is a joint work with Caterina Cruciani and Paolo Pellizzari, Department of Economics, University Ca' Foscari of Venice. The authors wish to thank the audiences at Ca' Foscari University of Venice and at the II Venice-Kagenfurt Workshop, and two anonymous referees for very useful comments and insights.

3.2 Introduction

The emergence of cooperation among utility-maximizing individuals is a long-standing puzzle for scholars. Economic and organizational research dedicated significant attention to the study of cooperative dynamics, addressing its drivers through a plurality of methods and tools.

Among others, Agent-based literature and Game Theory contributed to this field, modeling possible explanations for the emergence and evolution of cooperation among utility-maximizing agents resorting to *reciprocation* -direct or indirect (Axelrod, 1984; Nowak and Sigmund, 1998)- or other forms of *shadow of the future*(Axelrod and Dion, 1988). The former type of reciprocation, *direct reciprocity*, is classically formalized through repeated encounters between the same two agents who can decide either to cooperate or defect: mutual cooperation can be sustained by the long-term strategy, even if the best short-term one would be defection (Axelrod, 1984). In the standard framework for *indirect reciprocity*, agents are randomly chosen pairwise -a donor and a recipient-, and the likelihood of meeting the same individual is very low: information spreading allows to built one agent's reputation, which ultimately allows to sustain cooperation even among strangers (Nowak and Sigmund, 1998, 2005). Explanations of sustained cooperation based on the shadow of the future, refer to repeated games characterized by those mechanisms supporting cooperative actions in exchange for a future chance of reciprocation (Axelrod and Dion, 1988).

Research on cooperation and groups formation also dedicated significant attention to "other regarding preferences", suggesting the idea that individuals may feel more altruistically towards similar others. This idea has been studied in sociological and economic theory under the label of *homophily*, namely the tendency of social actors to form ties with other actors similar to themselves in terms of several dimensions - race, culture, religion, occupation, attitudes, etc. (McPherson et al., 2001). This concept has been variedly used and developed in game theory, economic and organizational research: from tag-based cooperation models (Riolo et al., 2001), to spacial and other forms of clustering (Axelrod, 1984), to peer pressure in partners selection to form alliances (Kandel and Lazear, 1992).

In this paper we aim at contributing to this strand of literature analyzing the emergence of cooperation among unrelated individuals based on the preference for similarity, proposing a model with two peculiar features: the context informality and agents characterized by semi-moving types.

This model shows features resembling standard social dilemmas in which cooperation is classically studied. Individuals choose to join a group anticipating they will experience a participation premium that is available to members only. This participation premium has an immaterial component depending on similarity, which has features of non rivalry among group members, although naturally it is excludable to non-members. Moreover, in order to participate in a group, individuals have to overcome the fear of being worse off after joining, as they will end up sharing their endowments with others. Due to this uncertainty regarding

others' individual endowments and to the structure of the utility functions, relative free riding takes place *within* the group: richer individuals bring relatively more material resources to the common pie but reap only an equal share of it, thus risking to be relatively free rided upon by less wealthy members.

In our model, similarity across individuals is measured along a vector of individual characteristics (salient and general values), pertaining to their individual preferences. Values enter into the computation of individual utilities alongside the material endowment (building on the idea of homophily). As in (Alesina and La Ferrara, 2000), we assume that "if preferences are correlated with these characteristics, [this] is equivalent to saying that individuals prefer to join groups composed of individuals with preferences similar to their own".

The utility function developed in this model is inspired from a concept found initially within the risk management literature, that of *Salient Value Similarity*, which introduces salient values as the relevant dimension for the perception of similarity. In our view, these values represent core standpoints of agents that cannot be subject to any adaptive processes. The other dimension of similarity is that of *general values*, that may be seen as more volatile positions than salient values, representing the perception of agents regarding the environment they are interacting in. As an example, the reader can think to potential cooperators of different race and diverse cultures, where the similarity among agents depends on an immutable trait (race) and on another cultural attribute that potentially can be adjusted and blended through repeated interaction and "contamination" among group members.

Agents are heterogeneous in their "endowments", and at each time they decide to join one of two groups or alternatively to stay on their own. Deciding to join, they automatically commit all their endowment as a contribution to the group, receiving as a payoff an equal share of the total contributions to the group and the value coming from similarity (the immaterial component of the utility function). Agents are free to join and leave groups at any time, with no costs of entry or exit. If they decide to exit (that is to say, stay on their own), they will keep their initial endowment.

Given the setup of our model, we expect to observe on the one side, the emergence of groups strongly affected by preferences for similar others and on the other side, the detrimental effect of heterogeneity in endowments on participation to groups, which translates in wealthier individuals preferring to stay on their own.

Interesting dynamics will be observed through the increasing number of "races" and variety of "cultures", the higher information spreading, and the introduction of a memory parameter for agents' previous choices.

The paper is organized as follows. After an introductory section aimed at contextualizing this work within existing literature, Section 3.4 introduces the main concepts and the features of the model. Results are presented in Section 3.5, where we discuss both representative examples and aggregate data obtained running a large number of simulations. Section 3.6

concludes discussing specific examples of potential application of the model and suggesting directions for further extensions.

3.3 Background Theory

Collective action is a very important driver in economics and has rightfully attracted a lot of interests from both economic theory and empirical analysis. The emergence of stable groups of like-minded agents is at the basis of the creation of institutions, of the provision of specific goods and services and in general of the progress of human society. If a strand of literature has focused more on understanding how to incentivize players to cooperate and form stable cooperative groups, there is still uncertainty regarding what fosters informal bonds that are common in everyday life in a setting of informal, unstructured interactions. When agents are not forced to join forces, which are the drivers that make them want to?

This paper is naturally framed in the context of cooperation and group formation research and represents an attempt to move forward in the investigation regarding the motivations for cooperative actions in *informal contexts*. In such environments interactions are sufficiently random and the probability of meeting the same person again is very low (or there is no possibility to precisely store information about previous encounters), thus there is very low possibility to resort to reciprocation. Moreover, informal contexts are characterized by the absence of biased interactions (Riolo et al., 2001), such as embedding agents in two-dimensional spaces (Axelrod, 1984; Lomborg, 1996) or other context-preserving networks (Cohen et al., 2001). Informality of the cooperation context can be also drawn from the presence of negligible direct or indirect costs (or their complete absence) for cooperating or participating in a group. These settings have been somehow less explored by agent-based literature, thus making them a challenging territory for both a theoretical and an empirical investigation.

The present work is characterized by an informal setting, and by a specific choice concerning the formalization of the *utility function* (further details are available in next section 3.4): it features both a material and a non-material component, where the former is constituted by an equal share of total individual contributions to the group, and the latter is based on similarity, and summarizes the idea of homophily as a driver of utility for the agents.

A lot of empirical evidence on the role of homophily has been provided by sociological and economic literature, showing how people prefer to connect, work, build relationships and play with similar individuals. Homophily has been explored in the literature across several dimensions like race, ethnicity, sex, age, religion, education, occupation -which refer to *status homophily*- and attitudes, abilities, beliefs and aspirations -which instead describe the *value homophily* (McPherson et al., 2001).

Empirical evidence supports the existence and role of homophily considerations. For instance, the study of Shrum et al. (1988), looking at race and gender differences shows how

students of US high schools build friendships mostly among the similar others.

In Lincoln and Jon (1979), it is shown also how work relations are affected by a selection bias due to homophily, resulting in teams highly homogeneous in terms of gender and ethnicity. The explanation given by the authors to the homophily bias in organizational processes is that: "Social homogeneity increases ease of communication and improves predictability of behavior, values which are central to organizational culture. Thus, [homophily] is nonetheless an expression of a rationalizing process - the need to eliminate uncertainty from organizational arrangements" (Lincoln and Jon, 1979). In this sense, the homophily considerations enter as an immaterial component in the utility function of organizations.

Studies focused on value homophily have shown also that attitudes, deep beliefs, and values similarity lead to attraction and interaction (Huston and Levinger, 1978), as for example, in the tendency of adults to associate with those with similar political orientations (Verbrugge, 1977).

The idea that similarity may in some ways foster cooperation is not new, either in experimental economics or in agent-based literature. In the former, it stems from an evolution of the experimentally founded fact that group identity or other forms of shared identity do support cooperative behavior among members (see Akerlof and Kranton (2000) for a seminal introduction to the role of identity in decision making) and increased uncooperative behavior among non-members (referred to as the in-group-out-group bias in Chen and Li (2009) and Sosis and Ruffle (2006)).

In this work we refer to a specific formalization of similarity, that of *salient value similarity*. This concept has been developed in the risk management literature, where it is used in a slightly different way, but its main message is carried over to the present work: salient value similarity has been consistently found as a precursor of *social trust* - trust regarding the institutions we live in.

Poortinga and Pidgeon (2006) describe salient value similarity as based on the idea that people use heuristics based on perceived similarities while making choices in complex environments, basing their judgments on the feeling that other persons or organizations have the same understanding of a specific situation. According to Siegrist et al. (2000) "Salient Values consist of the individual's sense of what the important goals (ends) and or processes (means) are that should be followed in a particular situation" and are "an aspect of the individuals understanding of the meaning of a specific situation".

The idea of salient values will be introduced in this work as the carrier of individual characteristics on which cooperation can be built, alongside another parameter, called *general values* representing less stringent individual features that also affect, although to a minor degree, the perceived similarity across subjects. Through these two parameters we build what we labeled as agents' semi-moving types that, to our knowledge, has not yet proposed in the literature and has interesting implications for modeling evolutionary processes somehow closer

to reality.

As previously mentioned, in fact, the possibility of using similarity as a driver for cooperation is part of a relevant strand of literature devoted to agent-based models (Edmonds, 2006; Kim, 2010). The evolutionary appeal of similarity has been established in the work of Riolo et al. (2001) and subsequent works by the same authors, which have shown in an evolutionary model with inheritable tags, that similarity can indeed breed cooperation.

Our introduction of a parameter summarizing general values, which typically cannot overcome the importance of extreme differences in salient values, is consistent with previous formalization of similarity found for instance in the mentioned Riolo et al. (2001), thus reinforcing the link between the present modeling exercise and the agent-based literature. However, differently from Riolo et al. (2001) evolving tags, we formalized the "contamination process"[2] in a significantly different way: general values do not simply become equal between interacting partners, but they evolve -depending on time spent cooperating in the same group- towards the group members' average value. Moreover, agents will be always characterized by their initial traits represented by salient values, that are not subject to any adaptive process. In the basic version of our simulation model, the contamination process do not take place, but general values will play their role in smoothing out partial differences in salient values, namely cultural similarities (general values) will help in overcoming ethnic differences (salient values).

Given this general setup, the groups that emerge in our model can be described as resulting from voluntary interaction, deliberately formed without a formal structure and based on mutual recognition of membership -given by the similarity perception. The idea on which this paper is built draws from the possibility that group formation may be motivated by the reciprocal recognition of some shared individual features, a process of *similarity identification* able to overcome the individual tendency to refuse cooperation when the individual return to cooperative behavior is uncertain, perhaps because of different (or unknown) initial capabilities to contribute materially to the group.

Thus, our expectations are twofold: on the one side, we expect to observe the emergence of groups of similar individuals, that thanks to homophily preferences are able to overcome the risk of committing their resources to a group; on the other, we expect to find wealthier agents less willing to cooperate despite homophily preferences, due to the higher risk of being exploited by less wealthy individuals participating to the group.

Evidences about the detrimental effect of wealth differences on participation to cooperative groups are already present in the literature. For example, Lidenberg (1982), in his investigation of *sharing groups*, shows how "with increasing welfare per individual in a section of population, sharing groups will become smaller". Another similar conclusion is reached in the work by Hegselmann (1994), which discusses and presents the Humboldt's argument about the welfare state destroying networks of self-help through a modified version of the Prisoner's

[2]In the basic version of our model no adaptation processes take place, but we formalized this process in its extended version presented in section 3.4.1.

Dilemma Game. Results show how the choice of cooperating in solidarity networks can become significantly less attractive if agents' wealth is beyond a certain threshold. In the work by Molinas (1998) it is discussed how empirical evidences about the effect of wealth differences on cooperation are still controversial, mainly due to the specific context in which studies are developed. But still, in his review, it emerges how the majority of studies agree on the detrimental effect of wealth inequalities for the emergence of cooperative structures.

In the present work, we will analyze how the homophily preferences -which positively sustain cooperation- and contributions inequality -which, instead, have detrimental effect on participation-, interact and are affected by changes of some parameters. In particular, we want to focus on participation levels resulting from the increasing number of "races" and variety of "cultures", the higher information spreading, and the introduction of a memory parameter for agents' previous choices, in the extended version of our model presented in section 3.4.1.

3.4 The model

In a nutshell, the model can be described as follows. A fixed number of heterogeneous agents are characterized by salient and general values. Agents consider the former as essential principles that are not subject to modifications or adaptation. General values, instead, are considered as less relevant issues. Both values considered, salient and general, are only those strictly related to the specific goal agents have in joining or not the group. Groups are formed by agents that share their endowment and give members a utility that increases with the size (the sum of individual contributions) and the overall similarity of the group.

In the presentation of the model, capital letters are assumed to denote quantities that stay constant, whereas small letters are assumed to denote variables that change with time.

Assume K agents have N salient values $S_{ij}, i = 1, \ldots, K, j = 1, \ldots, N$ and are given a non-perishable endowment $E_i, i = 1, \ldots, K$, that represent agent's potential contribution in joining a group. The stable, on-off nature of the salient values is stressed by supposing that they are drawn from the binary set $\{0, 1\}$ and denote with $\overline{S}_i = (S_{i1}, S_{i2}, \ldots, S_{iN})$ the vector of salient values of the ith subject. Agents are also equipped with general values that are represented by a real variable $0 \leq V_i \leq \epsilon, i = 1, \ldots, K$ and ϵ is a scale parameter.

At any stage, agents can decide to stay alone or join one of the two groups: in the former case, they will keep their initial endowment, otherwise they will commit it as their individual contribution.

Each agent at time t can be a member of the first or second group or be on his own. Let $\mathcal{G}_t^1, \mathcal{G}_t^2, \mathcal{G}_t^0$ be a partition of $\{1, \ldots, K\}$ that keeps track of the choice of the agents at any given time t. In other words, $i \in \mathcal{G}_t^w$ if and only if the ith agent is in the wth group at time t (being the "zero-group" the set of people that decided to stay out of either group).

The participation to one group yields members utility through two components. The first

one comes from the equal redistribution of the total contributions of the members of the group; the second is a non-material component that depends on the synergic interaction of the members that, in turn, is a function of the overall similarity of the characteristics of the agents (it can be thought as the benefit coming from homophily preferences).

Define a similarity function between agents i_1 and i_2 as

$$sim(i_1, i_2) = \sum_{j=1}^{N} \mathbf{1}(S_{i_1,j} = S_{i_2,j}) - \frac{N}{2} - (V_{i_1} - V_{i_2})^2.$$

The first term in the similarity counts the number of equal salient values; the second term subtracts $N/2$, so that the sum of the first two terms is nonnegative when at least 50% of the salient values are concordant; finally, the third term is the squared difference of the general values of the agents.

It is worth noting that the two parameters N and ϵ are related to each other: for a fixed N, a larger ϵ increases the importance of general values with respect to the salient ones. This formulation of similarity allows to model the idea that people have homophily preferences and like being in a group with like-minded individuals, where this like-mindedness is measured along the two given dimensions of values -general and salient.

In our formulation, similarity increases with common salient values but (exclusively) decreases with more different general values. Hence, the higher ϵ with respect to N, the less our agents will be willing to collaborate with other individuals, even in the presence of some consensus on salient matters.

As we will see later on, for our purpose, we set the parameters of our benchmark environment in such a way that even the complete disagreement on general values between two agents is more than compensated by the agreement on all salient values. This choice has been made to stress the relevance of salient values in the computation of similarity and, consequently, in terms of utility.

The utility of agent $i \in \mathcal{G}_t^w, w = 1, 2$ is then:

$$p_{it}^w = \frac{1}{|\mathcal{G}_t^w|} \sum_{i \in \mathcal{G}_t^w} E_i + \sum_{k \in \mathcal{G}_t^w, k \neq i} sim(k, i).$$

The two terms of the payoff incorporate on the one side, the fact that in a group "the more, the merrier"; on the other hand, it is of concern not only how many members there are, but who they are. The first term, $\frac{1}{|\mathcal{G}_t^w|} \sum_{i \in \mathcal{G}_t^w} E_i$, redistributes equal shares of the total amount of resources that all agents bring to a group: the decision to take part in a project implies an effort on the part of individuals and the risk of sharing one's own endowment to build the common pie that will be equally divided among all the participants. The second term, $\sum_{k \in \mathcal{G}_t^w, k \neq i} sim(k, i)$, adds to each agent's utility the total sum of the pairwise similarities. For each agent, this total sum can be considered as a measure of the overall coherence of the

group, that results in a higher return in terms of synergies for all the members.

If $i \in \mathcal{G}_t^0$, the agent prefers to stay alone and his payoff for the current period is simply his own endowment E_i, i.e., $p_{it}^0 = E_i$.

The option to stay out, to join or leave one of the two groups is available, at no cost, at any time t. This setting represents the needed informality to model groups, defined without a formal structure (possibly acting within a more regulated environment). Agents' decisions will be based on partial information that is gathered at each time by randomly matching some members of groups (including agents "out" of any group). Hence, groups are dynamic structures that evolve and are shaped by in-group similarity and by the actions driven by the randomness of the matching process.

Being aware that utilities are stochastic and dependent on the fluctuating composition of the groups, at each time, every agent randomly and independently meets P other agents, exchanging information about the size of groups, the contribution and the similarity of the matches. This data are used to compute a myopic estimate of the utility of being in a given group.

Agents are myopic in the sense that they assume that the P agents they met are representative, in terms of values and contribution, of their whole group (i.e., they believe the sample has the same average value of similarity and the same average endowment of their group).

In particular, fix i and assume that $\mathcal{A}_t$ is the set of P agents that meet i. Let

$$\begin{aligned} \mathcal{A}_t^1 &= \mathcal{A}_t \cap \mathcal{G}_t^1, \\ \mathcal{A}_t^2 &= \mathcal{A}_t \cap \mathcal{G}_t^2, \\ \mathcal{A}_t^0 &= \mathcal{A}_t \cap \mathcal{G}_t^0, \end{aligned}$$

be the subsets of matched agents that are in three $\mathcal{G}_t$, where we drop the reference to i to simplify notation. The agent works out the average endowment of the members of each set and the average similarity with them. The aforementioned quantities $\hat{e}_t^w$ and $\hat{m}_t^w$ for $w = 1, 2$ are given by

$$\begin{aligned} \hat{e}_t^w &= \frac{1}{|\mathcal{A}_t^w|} \sum_{j \in \mathcal{A}_t^w} E_j; \\ \hat{m}_t^w &= \frac{1}{|\mathcal{A}_t^w|} \sum_{j \in \mathcal{A}_t^w} sim(i,j). \end{aligned}$$

Using this information, the ith agent can myopically estimate the utility that would result if he switches to one group, assuming the sample averages are representative of the whole group.

Hence, estimated utilities in the three possible situations are

$$\pi_t^w = \hat{e}_t^w + |\mathcal{G}_t^w|\hat{m}_t^w, w = 1, 2$$

and

$$\pi_t^0 = E_i.$$

The utility of choosing to stay out is set equal to E_i, thus the always available exit option from an informal group corresponds to the sure alternative of keeping one's initial endowment. The reason why individual endowment is not affected positively or negatively by the participation (or lack thereof) in a group lies in the informality of the environment. In fact, participating in a group has neither direct nor indirect costs which can deteriorate initial endowments.

Nevertheless, agents exiting from a group are not able to keep the gains of the previous period, returning exactly to their initial state. This modeling choice wants to emphasize the fact that the benefits of being in a group come from the synergies among members and their pooling of resources. An agent who decides to stay on his own, exiting the group, can only count on its own resources.

At the end of period t, agent i chooses to move to another group or to abandon altogether any group based on the highest estimated utility. In more detail, agent ith will move to group w at $t+1$ if

$$\pi_t^w = \max\{\pi_t^1, \pi_t^2, \pi_t^0\}.$$

This simple setup, called *basic* in what follows, can be used to computationally study how groups emerge and evolve on the basis of the similarity in values, and how wealth heterogeneity affects levels of participation.

3.4.1 Extensions

As more refined forms of reciprocal influence among agents can be conjectured, an extended model can take into account *memory effects*. The remaining part of this section outlines this enhancement.

Agents are likely to realize that better utility estimates can be obtained by blending past measures with the novel information derived from sampling. Hence, they update a running measure of the benefits arising from participating to each group and the ith agents takes the decision to switch at time $t+1$ based on the highest among

$$\begin{aligned}
\widehat{\pi}_t^1 &= \alpha\pi_{t-1}^1 + (1-\alpha)\pi_t^1 \\
\widehat{\pi}_t^2 &= \alpha\pi_{t-1}^2 + (1-\alpha)\pi_t^2 \\
\widehat{\pi}_t^0 &= E_i,
\end{aligned}$$

where $0 \leq \alpha \leq 1$ is a memory-related coefficient. The basic setup can immediately be recovered by setting $\alpha = 0$ and the parameter α represents agents' memory, or stickiness: when $\alpha \cong 1$, agents will compute their estimates mainly using their previous results whereas for values of α close to zero, agents will rely more on their novel information.

It can be argued that the introduction of a memory parameter could be traced back to some forms of indirect reciprocity: in our opinion this is not the case, since its formalization do not allow to store precise information about other group's members and the estimation of future payoff is still myopic in this respect.

In the next sections, we will refer to the memory-extension as the *extended version* of the model.

Although empirical results will not be provided in the development of this work, we present another promising avenue of investigation we believe is offered by the *contamination processes* among cooperating agents, concerning their cultural traits. In fact, agents may reasonably be willing to adapt their general values which, by definition, are more volatile and possibly can be modified to better fit the general values of other members of the group.

Coherently, we will denote the general values in this case using v_{it} instead of $V_i, i = 1, \ldots, K$ (small *vs* capital letters).

We assume that, in general, agents are more willing to modify their general values towards the average value the longer they have been in the same group.

Formally, for fixed i and t, if τ is the time the agent has continuously spent in one group, his general value at $t + 1$ is given by

$$v_{i,t+1} = \beta v_{it} + (1 - \beta)\overline{v}_{it},$$

where $beta = \tau^{-\gamma}$, $\gamma \geq 0$ shapes the speed of adjustment[3] and $\overline{v}_{it}$ is the average general value of the members of the group agent i belongs to at time t.

Although we do not provide results for the last extension of the model in the present paper, we believe that its presentation would give the intuition of the possible future ways of investigation of other cooperative dynamics the present work will offer.

3.5 Results

This Section presents the simulation results for the basic and extended versions of the model, as described in Section 3.4.

It is difficult to give full account of a dynamic process like the one modeled in this paper using only static pictures and tables. Thus, selected movies and animations are available at `http://multimedia.dma.unive.it/groups/abmc/`. In this paper, results are presented in a

[3]Clearly, there is no need to have a constant γ and heterogeneous γ_i can be used to model various willingness to adjust individual general values.

specific instance in order to give the flavor of the main dynamics. The results of multiple simulations are then summarized in table form to provide a more comprehensive look at the average properties typically present in a large sample of groups that are generated for a given constellation of parameters' values.

Table 3.1 shows the reference, or benchmark, values for the parameters that define a reasonable starting point for our investigation. These values were determined by trial-and-error and then modified, one at a time, to assess the incremental effects of single parametric variations.

Name	Value	Description
K	50	Number of agents
N	2	Number of salient values
ϵ	1.0	Amplitude of general value
P	2	Number of agents sampled (in computing expected utility)
α	0.0	Memory (in estimating utility)
T	200	Periods
$\overline{E}$	10	Average initial endowment

Table 3.1: Parameters of the benchmark environment.

A number of 50 agents is considered, with 2 salient values and a real variable uniformly sampled in $[0, 1]$ summarizing their general values. Each run of the model lasts 200 periods and, unless stated otherwise, endowments of agents are uniformly sampled in the interval $[0.5\overline{E}, 1.5\overline{E}]$, where $\overline{E} = 10$.

3.5.1 The Basic Model

This Section reports results of simulations with the Basic formulation of the model. In particular, no memory is used by agents (i.e., $\alpha = 0$).

The left panel of Figure 3.1 depicts the time series of the number of participants belonging to each group (labeled with different colors, with green indicating individuals staying out of either group). The right panel shows the average utilities of the members at each given time.

The sizes of groups fluctuate widely: out of the 50 agents populating the model, the number of members of one group frequently goes from over 20 to well below 10.

The reason of such marked fluctuation of groups' dimension is rooted in the volatile process of gathering information and in the resulting decision to join or abandon the groups they were in. The explorative nature of the group formation process is such that, interestingly, around period 90 most agents desert groups to stay on their own, as the green line clearly shows.

The average utility of group members is not strictly related to the size of the groups, as the right panel of Figure 3.1 shows but, again, varies widely. While staying outside of any

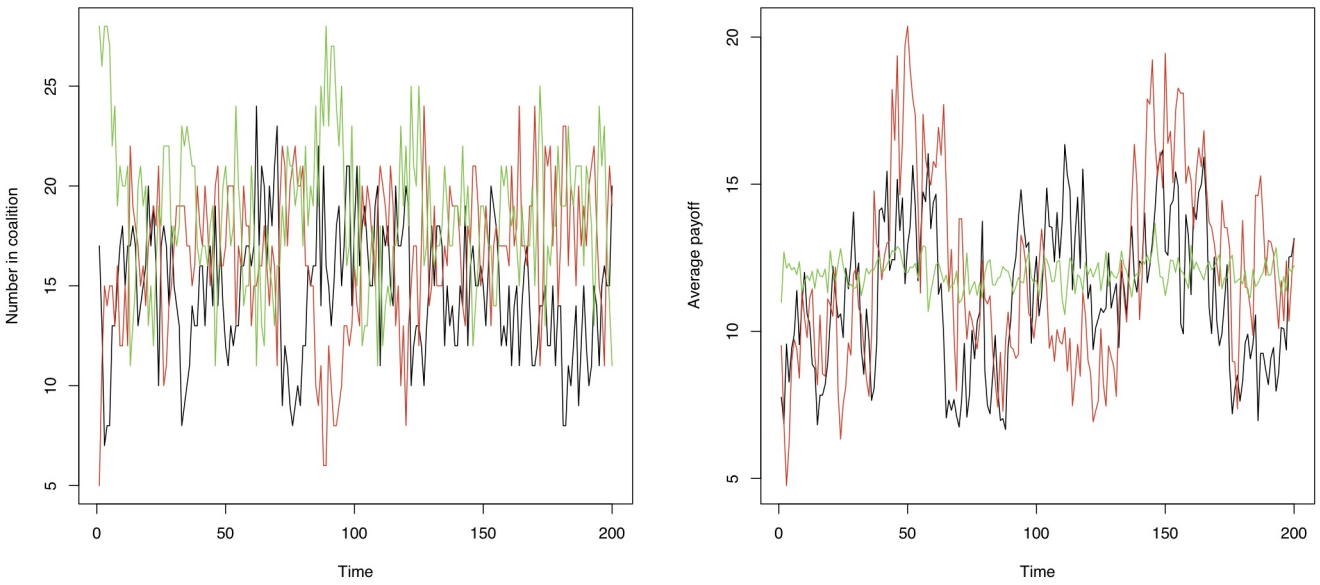

Figure 3.1: Time series of the number of members (left) and average utility (right) for each group. Black, red and green lines denote the first, second group and the number of those who stay out, respectively.

group yields roughly 12 on average, joining the second group around periods 50 or 150, say, produces a hefty utility close or even bigger than 20.

The left graph of Figure 3.2 depicts the average similarity of the members of the two groups. This quantity will be referred as *coherence* of the group in the following. Although there are significant variations in the average similarity over time, there are periods, like $t = 50$ or $t = 150$, where agents are grouped into fairly homogeneous groups.

The right panel of the figure represents the salient values of the members of the first group at time 154, when its coherence peaks around 0.55. The bits are color-coded, with yellow and red denoting "1" and "0", respectively. The picture shows that every member, at that time, shares at least one salient value (out of two) with every other peer, thus explaining the large average similarity.

A plot of the similarity matrix is a useful tool to shed further light on the dynamics of the groups, in terms of size and internal coherence. Figure 3.3 shows two color-coded similarity matrices, relative to periods 50 (left) and 87 (right). In the matrices, members of the first, second and stay-out group are sequentially appended, and the (i, j) entry of the matrix represents the similarity of agents i and j, with yellow (red) denoting large (small) values. The first group is then shown on the bottom-left corner of the matrix whereas the second group is usually visible in the central part of the matrix, along the main diagonal. The upper-right corner represents the agents that do not belong to any group.

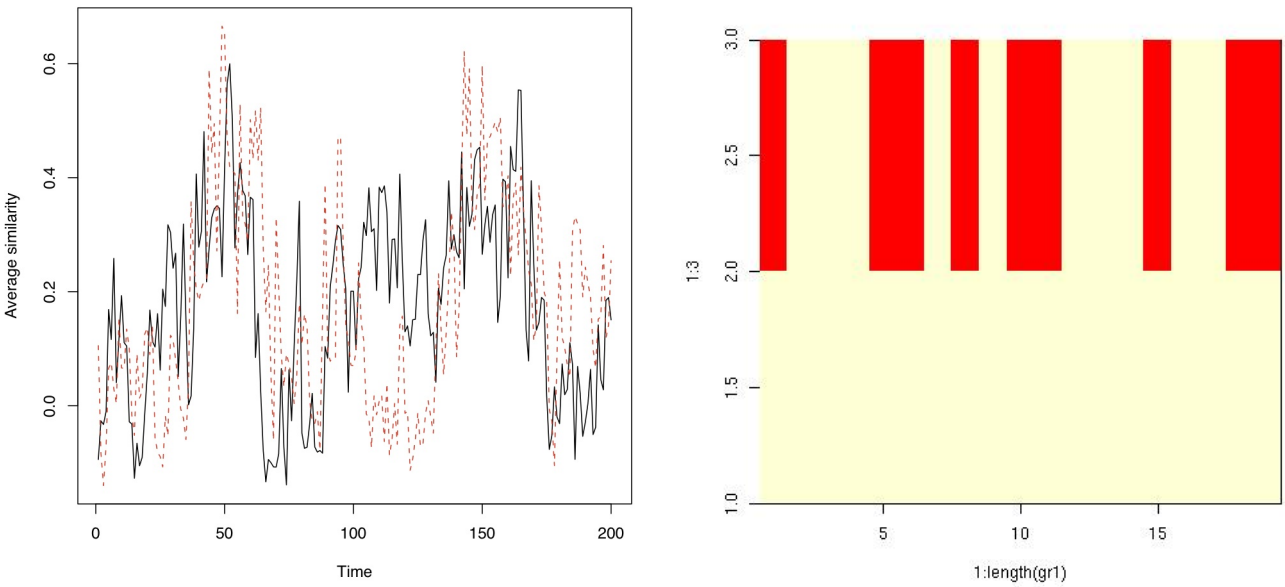

Figure 3.2: Average similarity of the first (black) and second (red) groups (left). Salient values for group 1 members, yellow and red denoting "1" and "0", respectively (right)

The left panel shows the situation in period 50, where a homogenous second group can clearly be seen in the bright block of entries $\{(i,j) : 13 \leq i,j \leq 29\}$. The first group appears to be made of less uniform agents in the bottom-left corner, where $1 \leq i,j \leq 12$. The previous figures show that sizes at time 50 are 12 and 17, with average similarities of 0.42 and 0.65 and average utilities of 12.92 and 20.37.

The right panel of Figure 3.3 displays the similarity structure at time 87 when, basically, groups are dismantled and agents are still in the way to form uniform groups. The first and second groups are barely visible despite their 14 and 11 members, the average similarities are -0.08 within both groups and, hence, the utilities are (only) 7.03 and 7.29, respectively. The difference in the two plots of Figure 3.3 visually confirms the general outcome that there is a remarkable time-variability in the groups that emerge in a single simulation.

Figure 3.4 shows the time series of average contributions of the members of the groups. Typically, the endowments of agents that join in groups are smaller than the ones belonging to agents that opt to stay out. This result, depicted in a specific instance in Figure 3.4, is a very robust feature of the model (also with different configurations of parameters) and nicely matches already discussed results from previous studies (Lidenberg, 1982; Hegselmann, 1994; Molinas, 1998).

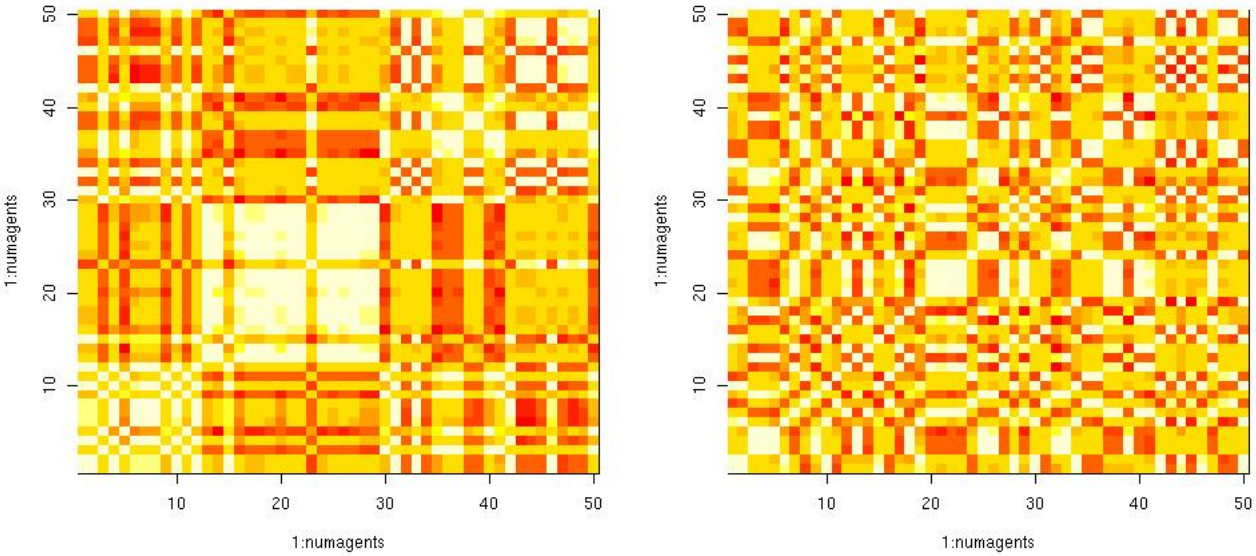

Figure 3.3: Similarity matrices at times 50 (left) and 87 (right). The hue of entry (i, j) smoothly blends from bright yellow to dark red as the similarity decreases.

Multiple Simulations

This section is dedicated to the description of more general features of the groups generated by the model as we change the level of some key parameters.

We run 100 independent simulations and measure the average size of both groups, labeled generically "small" and "large", together with the average size of the set of agents that decided to stay out, in order to discuss participation levels as some parameters change. Moreover, we compute the *coherence* of the groups, the fraction of times in which the largest group changes (Sw), the average contribution of members (E) and their average utility (π). The last two values are normalized with the average endowment of the population $\overline{E}$. When computing any time-average, we discard the first 50 periods that are possibly affected by transient initial effects.

The first parameter analyzed is P, the number of individuals each agent randomly and independently meets when computing the expected utility of joining a different group, that can be interpreted as the level of information spreading within the population.

The first panel of Table 3.2 shows, for example, that when agents sample $P = 1$ peer in each period, the smallest (largest) group has an average of 14.65 (16.74) members. The group of agents that stay out is normally larger (18.60 members) and the largest group changes on average every 4 periods (26%). Moreover, members of both groups are relatively poor, as shown by their endowments which is 93 or 94% of the average endowment of the population. The payoffs of agents belonging to either group is, however, substantially larger as they get a

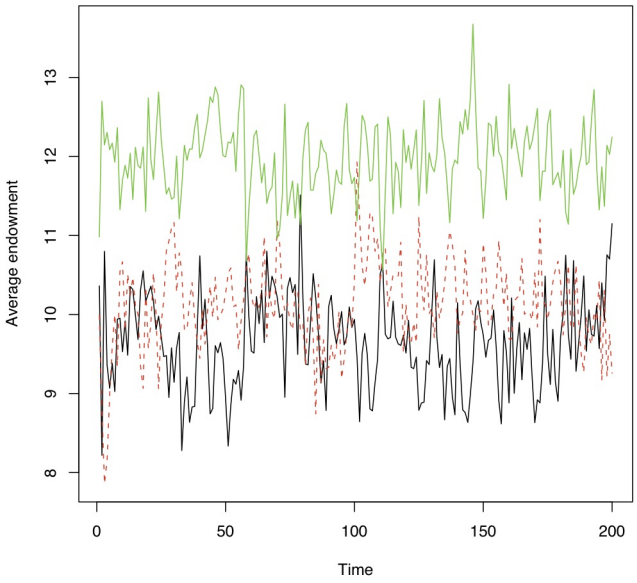

Figure 3.4: Average contribution of groups members: black, red and green lines refer to the first and second group and to those who stay out.

utility that is 100 and 114% of the average endowment of the population. Subjects that do not participate to groups are richer on average (1.11) and, by definition, get exactly the very same payoff.

The other panels show that the sizes of the groups are increasing in P. This result is likely to be related to better decisions taken by agents when a larger sample size is allowed for. This interpretation is corroborated by the higher utility for members of both the small and the large group, that is due in turn to the increased coherence of both groups.

The second parameter studied is ϵ (Table 3.3), the upper bound of the real variable representing general values of the population. Notice that the second panel, relative to the

P		Size	Cohe	Sw	E	π
	Small	14.65	0.12	0.26	0.93	1.00
1	Large	16.74	0.18	-	0.94	1.14
	Out	18.60	-	-	1.11	1.11
	Small	15.58	0.29	0.34	0.94	1.29
2	Large	18.79	0.38	-	0.95	1.56
	Out	15.63	-	-	1.12	1.12
	Small	16.90	0.43	0.22	0.94	1.57
4	Large	21.65	0.43	-	0.96	1.79
	Out	11.45	-	-	1.14	1.14

Table 3.2: Time-averaged quantities for different values of P.

benchmark case where $\epsilon = 1.0$, is exactly the same as in Table 3.2.

ϵ		Size	Cohe	Sw	E	π
	Small	16.37	0.23	0.33	0.93	1.20
0.5	Large	18.51	0.27	-	0.94	1.35
	Out	15.13	-	-	1.14	1.14
	Small	15.58	0.29	0.34	0.94	1.29
1.0	Large	18.79	0.38	-	0.95	1.56
	Out	15.63	-	-	1.12	1.12
	Small	10.02	-0.03	0.26	0.88	0.72
2.0	Large	12.78	-0.01	-	0.92	0.81
	Out	27.20	-	-	1.08	1.08

Table 3.3: Time-averaged quantities for different values of ϵ.

The Table shows that there are values of ϵ for which the coherence and size of both groups drops dramatically. When $\epsilon = 2.0$, the disruptive diversity in the general values is such that joining a group is actually harmful in terms of utilities (as the beneficial similarity in salient values is too weak and few reasons are left to call them "salient" in such a situation.)

Once again, we find that richer individuals tend to remain out of the groups, looking at the average endowment of the stay-out group. Not surprisingly, the number of people choosing not to join either group increases with ϵ, for the reasons we have just discussed.

N		Size	Cohe	Sw	E	π
	Small	19.06	0.36	0.16	0.95	1.57
1	Large	25.32	0.36	-	0.99	1.84
	Out	5.61	-	-	1.17	1.17
	Small	15.58	0.29	0.34	0.94	1.29
2	Large	18.79	0.38	-	0.95	1.56
	Out	15.63	-	-	1.12	1.12
	Small	16.49	0.10	0.29	0.96	0.96
3	Large	18.34	0.12	-	0.97	1.04
	Out	15.18	-	-	1.06	1.06

Table 3.4: Time-averaged quantities for different values of N.

The last parameter studied is N, the number of salient values of agents (Table 3.4). As N grows, it is more difficult for agents to join the "right" group, given that in the current version they can choose between two groups only. As an example, the combinations of salient values can be interpreted as four different ethnic groups such as White, Blacks, Asian and Latinos. The problem of cooperation arises from having the possibility to join only one of the two available organizations, which cannot perfectly resemble racial divisions. We feel this is a realistic feature of the model that would otherwise yield trivial results if the number of groups could accommodate all the different types with negligible discordance. As a result, table 3.4 shows how the size, coherence and the average utility decrease as the number of salient values

increases.

For all the three tables presented above (tables 3.2, 3.3, 3.4) studying the effect of the parameters P, ϵ and N, the measure of the switching rate between the large and small group do not provide relevant insights, suggesting that none of the three parameters have significant effects in establishing a stable group dominant in size.

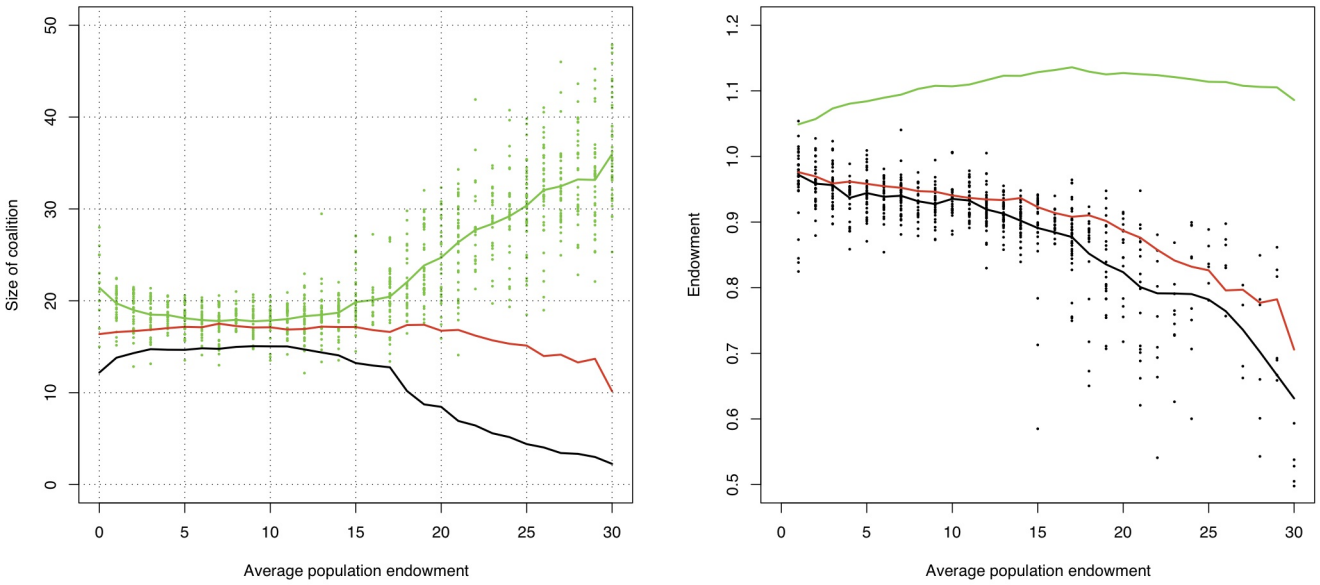

Figure 3.5: Size of groups (left) and average contribution of members (right) as a function of the average endowment of the population $\overline{E}$. Black, red and green lines refer to the small and large groups and to those who stay out, respectively. The figure is based on 1000 simulations with a randomly sampled $\overline{E} \in \{0, 1, \ldots, 50\}$. Variations are shown only for group "out" (small) in the left (right) panel, for clarity of exposition.

It is interesting to further explore the joint effect of the two components of the utility. Recall that one part is merely the equal share of the sum of the members' contributions, whereas the second (social) component is related to similarity. Figure 3.5 shows how the average size and the contribution of groups depend on the average endowment $\overline{E}$ of the population. Keeping fixed the other parameters, a larger (smaller) $\overline{E}$ makes joining a group less (more) convenient on a relative basis, as the profit from interaction is a little (substantial) part of agents' wealth. It is interesting to note that for the case $\overline{E} = 0$, the agents' utility is determined purely by the non-material part, thus the choice of joining or not is driven exclusively by their evaluation of similarities.

The left panel of the Figure 3.5 shows that, as expected, an increase in the endowment pushes more agents to choose to stay out. The size of the two groups declines and, at the same time, the average endowment of the members of the groups shrinks, as can be seen on the right panel. In other words, a larger average endowment in the population reduces the

size of the groups, which end up in attracting fewer and poorer agents.

Synergies here defined can be thought both in terms of benefits coming from homophily preferences (liking to be in a group with like-minded individuals) and, borrowing from a recent survey by Mesterton-Gibbons et al. (2011), in terms of the ability of a group to expand the pie of payoffs accessible to agents. The previous results show that N, ϵ, as well as $\overline{E}$, all have an impact on the synergy of the groups generated by the model. This outcome appears to be sensible as the number of salient values is likely to shape the willingness of agents to join together with the (possibly adverse) effect of significant general values. At the same time, wealthy populations with large $\overline{E}$ reap relatively little benefits from grouping and ultimately stay out, whereas smaller average endowments push agents to join in order to increase their utilities.

3.5.2 The Extended Model

This Section describes the case in which agents have some memory, characterized by a coefficient $\alpha > 0$, and estimate utility using a weighted average of past utilities and inferred information based on P samples.

As for the previous model, we first present a specific run and then aggregate many simulations to provide large-sample evidence of typical behavior.

Let the parameters be given as in Table 3.1, with the exception that $\alpha = 0.4$. Figure 3.6 shows the size and average utilities of the three groups. The presence of memory produces a large and stable group (red line) that is always dominant in size and quite often yields the highest average utility. The smallest group (black line) includes roughly 10 members, leaving on average 15 agents on their own (green line). The right panel shows, if the initial transient is discarded, approximately steady utility for all groups.

In particular, the performance of the small group in terms of utility is relatively good, taking into account the difference in size with the dominant one. This is due to the internal large coherence of the smallest group that counterbalances its small size. Consistently with this result, we report that the average coherence of the two groups are 0.78 and 0.40 in this specific simulation.

The left panel of Figure 3.7 shows the similarity matrix of agents in period 160. There is a small but extremely coherent first group on the bottom-left corner and a larger second group characterized by less similar agents, as shown by several darker hues. The relative stability of the groups that are formed with such a level of memory translates into a higher degree of similarity that lasts over a number of periods.

The right panel of Figure 3.7 displays several statistics for a specific agent whose endowment, equal to 12.53, is shown as a dashed line. In particular, the upper (lower) black line shows the estimated utilities of joining the second (first) groups. The red line, often superimposed on one of the previous estimates, depicts the utility actually cashed by the agent.

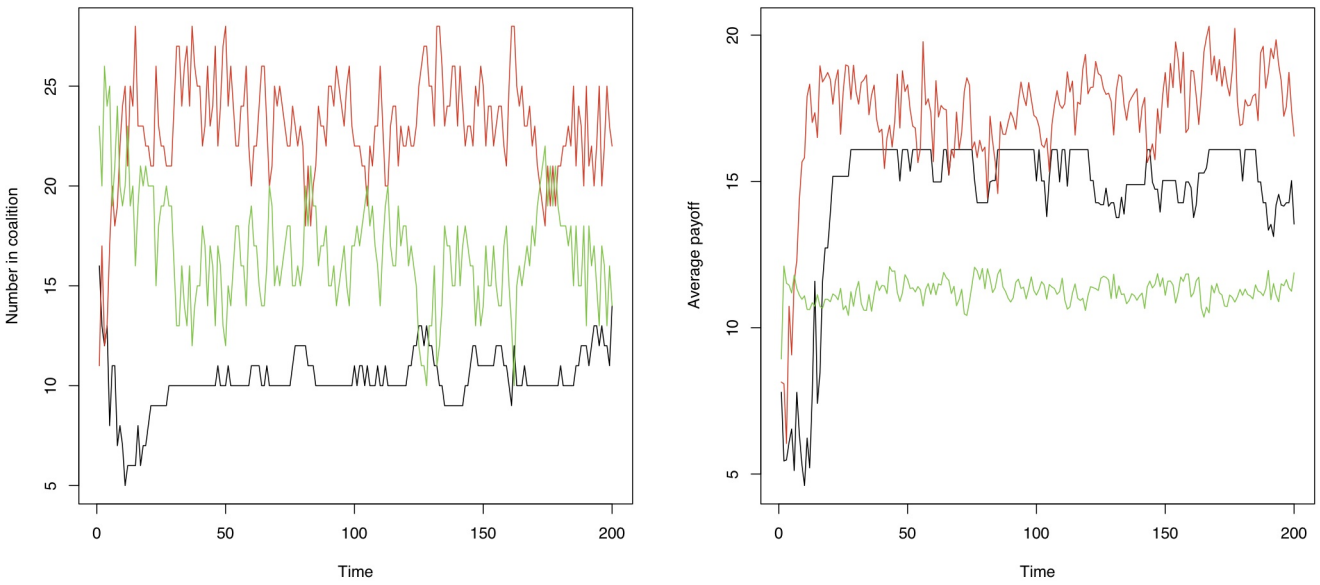

Figure 3.6: Time series of the number of members (left) and average utility (right) for the three groups when the memory coefficient is $\alpha = 0.4$. Black, red and green lines denote the Small, Large and Stay-out group, respectively.

This individual mostly joins the second group, occasionally staying alone for brief periods. Clearly, the estimated utility to be in the first group (lower black line) never exceeds his endowment or the perceived benefit to join the second group (upper black line). Hence, the agent frequently stays in the second group, inflating his utilities that would have been much lower if alone or in the other group.

As this example shows, introducing some memory allows agents to act correctly even if their decisions are based on a myopic estimate. In fact, the estimated utility for joining the second group is a reasonable guess of the actual payoff, given the fact that only $P = 2$ agents are sampled in each period. Notice, in particular, that local estimation errors are most often irrelevant, as they do not force the agent to abandon the group.

Multiple simulations

This section describes the more general features of the groups generated by the model once a memory parameter has been introduced. The structure of the presentation of the results mirrors the one of the previous Section, in which no memory was present, and, when computing any time-average, we discard the first 50 periods to avoid transient initial effects.

Table 3.5 shows the changes in some key variables for three levels of the memory parameter α. As α grows to 0.4, the size, coherence and average utilities increase significantly for both groups. When α grows to 0.8, it is in particular the large group that benefits from this change,

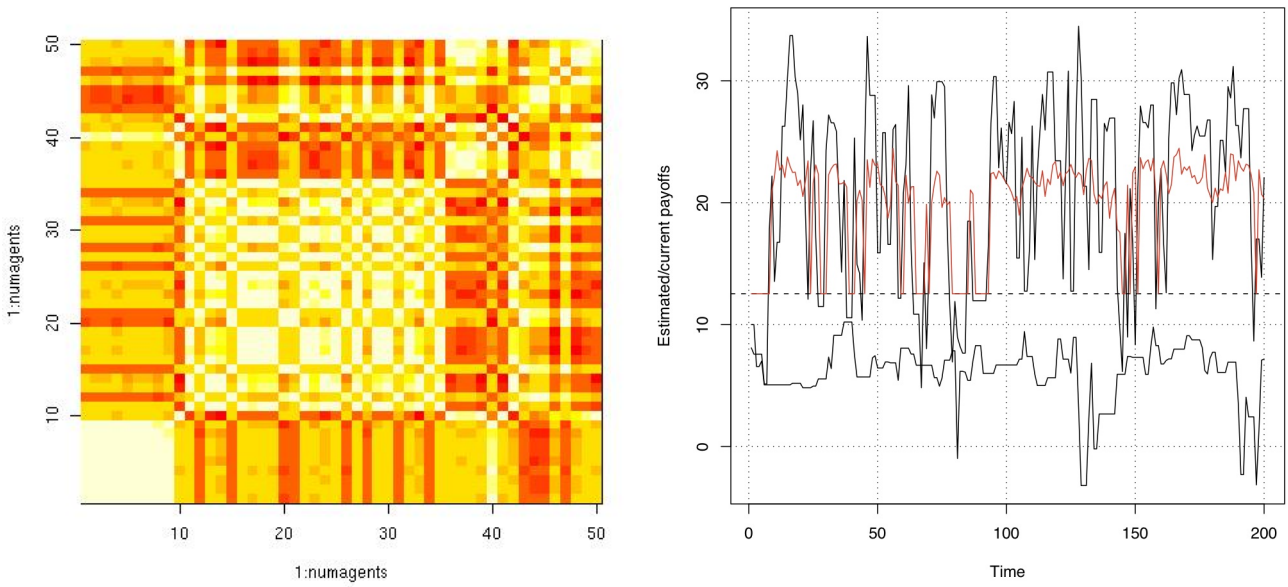

Figure 3.7: Similarity matrix in period 160 when $\alpha = 0.4$ (left panel). Time series of the estimated utilities q_t^1, q_t^2 for a given agent (right panel). Actual utility and endowment of the agent are shown with red and dashed lines respectively.

attracting a much larger number of individuals. In both cases the number of agents deciding to stay out, instead, decreases markedly, but they remain the wealthiest group in the population. Coherently with the results of the basic model, the members of the large group always achieve a larger utility on average. Moreover, being in a group is always better than remaining out even in this extended model.

Some memory appears to have long-lasting effects in that more stable groups are formed. This is confirmed by a dramatic drop in the switching rate pointing out that a dominant group quickly builds and persists for most periods.

3.6 Discussion and conclusion

We presented an agent-based model of groups in informal settings, in which cooperation is constructed through the flexible concept of perceived similarity. In our model, agents decide whether to join or abandon one of two possible groups, without any cost - due to the informality of the setting. At the end of each period, utilities are computed on the bases of the size of the group ("the more, the merrier") and the overall similarity of the group ("the more coherent, the better").

An innovative aspect of our model is the characterization of agents with some personal features, called *salient* and *general* values, which combine into what we called agents' semi-

α		Size	Cohe	Sw	E	π
	Small	15.00	0.31	0.27	0.92	1.28
0.1	Large	18.63	0.37	-	0.95	1.54
	Out	16.37	-	-	1.12	1.12
	Small	16.27	0.47	0.19	0.92	1.56
0.4	Large	20.81	0.45	-	0.96	1.79
	Out	12.92	-	-	1.15	1.15
	Small	13.73	0.57	0.05	0.85	1.45
0.8	Large	24.56	0.43	-	0.96	1.88
	Out	11.70	-	-	1.18	1.18

Table 3.5: Average dynamics for different values of α.

moving types: the former represent the standpoints agents take on matters related to a goal important for the group, whereas the latter describe agents' position about more negotiable issues. Together with agents' endowment (heterogeneously distributed), similarity in values drives successful or unsuccessful cooperation. Individuals will cooperate, joining forces and sharing resources, if they perceive the group can increase their utility, which has two components: the average contribution of the group, and the sum of all pairwise similarities. The latter component represents the immaterial utility of being in a group with people one likes -reflecting homophily preferences- as they share a combination of common values.

The model reproduces some known stylized facts, like the higher likelihood of poorer agents to join (Molinas, 1998; Lidenberg, 1982), and can be used to describe and interpret empirical examples of stable cooperative groups without direct or indirect reciprocity among members, or shadow of the future considerations.

The basic formulation of our model aims at contributing to the strand of literature dealing with the evolution of cooperation based on peers' similarity. The evolution of cooperation based on agents' common features has recently received some attention in agent-based research, mainly because it seems to better represent real situations. Specifically, much attention has been devoted to the research on homophily, which explores how perception of similarities between individuals can foster cooperation sustaining trust-building processes (without the introduction of incentive schemes or reciprocity concepts).

The work of Riolo et al. (2001), for example, has shown in an evolutionary model with inheritable tags that similarity can indeed breed cooperation. Our model is consistent with their formalization of similarity and it is able to enrich their intuition in introducing semi-moving types which can enrich the "contamination process". Indeed, the distinction between general and salient values, where salient are unchangeable binary values whose importance can never be overcome by the parameter summarizing general values, leads to a sophistication of the concept of similarity towards a better representation of "real" economic agents.

The introduction of a memory parameter, in the extended version of the model, shows that the fewer agents deciding to stay out are still characterized by higher endowments than

the rest of the population. More interestingly, some memory leads to the formation of more stable groups, with very low rates of switching and the presence of a dominant and persistent group for most of the periods.

There are a number of limitations in our work that point to potential avenues for future developments. Focusing on what we perceive are the most interesting issues, we plan to work on adaptation of general values and endogenization of the number of possible groups and of the memory coefficient α.

Assuming a fixed number of groups and a predetermined memory coefficient has clear shortcomings and may be inappropriate in certain circumstances. Some of the results suggest that the endogenization of α could be obtained letting agents choose which is the optimal level of memory they should have (with respect to their own characteristics) in order to maximize expected profits.

Moreover, standard clustering algorithms could be used to establish benchmark groups of agents that can be compared with the groups produced by our model of social interactions. Preliminary results (not shown here) point to subtle but persistent differences in the clusters/groups obtained with the two methods and suggest that this fact may be due to potential synergies among agents that are only captured when the similarity perception is used by agents in a dynamic way. This could have interesting potential applications in interpreting empirical facts, or even suggesting new solutions in a wide range of environments, such as business organizations or socio-economic institutions.

One last point deserves mention. Although our setting does not currently allow for the emergence of trust in its most standard way, the introduction of salient values as a medium to facilitate cooperation certainly goes in the direction of investigating what ultimately motivates trust-building processes. In the model described in this paper, there is no possibility for trust to emerge, as agents do not recall specific characteristics of other agents, but simply sample and make inferences on the average similarity of the group. Nevertheless, the perception of similarity even with respect to a group of indistinguishable individuals is enough to foster more cooperative behavior, facilitating the emergence of profitable groups. This points to the need of further understanding what is the exact relationship between similarity and trust building, which could become a potential avenue for further development of the current model.

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