An institutional analysis of governance structures: how institutional carriers influence decision making in Brazilian environmental-education Internet-mediated communities

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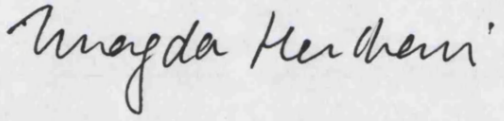

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Abstract

This thesis presents an investigation on the institutionalisation of four Brazilian Internet-mediated communities that provide debate and organize political mobilization related to the education on environmental issues. Drawing on new institutionalism, this research claims that institutional factors influence how these collectivities structure their governance and decision-making processes. More specifically, this study adopts W. Richard Scott's (2001) framework on institutional carriers to analyse the phenomenon of the diffusion of a segregated decision-making process, which Simon (1997 [1945]) claims is an instance of centralization present in hierarchical organizations, in communities that declare to be attempting to create network-like organizational structures. The comparative case study, based on qualitative methodology (in-depth, semi-structured interviews), reveals that laws, power and authority systems, cognitive schema, jobs, roles, scripts and Internet tools, among other institutional carriers, influence the communities in reproducing centralized governance structures. Furthermore, this research highlights how social actors interpret and reproduce such social structures in their environment. This research balances the role of both social structures and agency to understand how institutional forms diffuse through the studied virtual communities. Empirical evidence suggests social actors embed institutionalised social structures in their practices through adapting them to the situation, which includes the cultivation of mechanisms of legitimation and sanctions of patterned behaviour.

Key words: *virtual communities, Internet-mediated communities, governance structures, new institutionalism, institutional carriers*

Table of contents

1. **Introduction: Research groundings**.....10
   1.1. The emergence of virtual communities.....11
   1.2. Contrasting features between ideal and actual decision-making processes.....15
      1.2.1. Pilot study.....17
   1.3. The relevance of studying the institutional influence in virtual communities....24
   1.4. Research design.....27
      1.4.1. Research domain.....27
      1.4.2. Research empirical objects.....28
      1.4.3. Research approach.....33
      1.4.4. Research question.....34
      1.4.5. Outline of contributions and limitations. 34
   1.5. Outline of next chapters.....36

2. **Literature review: The debate on virtual communities**.....38
   2.1. Community versus social network.....39
   2.2. The boundaries of virtual communities.....42
   2.3. The main research topics.....44
      2.3.1. Virtual communities channel information and emotional support.....45
      2.3.2. Virtual communities affect the formation of social capital.....46
      2.3.3. Virtual communities support neighbourhoods.....47
      2.3.4. Virtual communities foster the construction of social identity.....47
      2.3.5. Virtual communities struggle for long term sustainability 48
      2.3.6. Virtual communities have rules of governance and behaviour.....49
   2.4. The influence of institutions in virtual communities.....50
      2.4.1. Institutional influence as a secondary theme.....50
      2.4.2. Institutional influence as a primary theme.....52
      2.4.3. This dissertation's contribution to the literature.....54
   2.5. Methodology and limits of the present literature review.....55

3. Theoretical framework : A new-institutionalist approach.....57
3.1. Conceptualisation of institutions.....62
3.1.1. Definition of institution.....64
3.2. The process of institutionalisation.....67
3.2.1. Berger and Luckmann's view of institutionalisation.....68
3.2.2. Institutionalisation as isomorphic mechanisms.....70
3.2.3. Institutionalisation through institutional carriers.....73
3.2.4. Scott's framework of institutional carriers.....76
3.3. Institutional change and inertia.....79
3.3.1. Aspects that favour institutional inertia.....80
3.3.2. Aspects that favour institutional change.....82

4. Methodology: A qualitative investigation.....84
4.1. Conceptual framework and qualitative research.....85
4.1.1. Interpretive orientation.....86
4.2. Multiple case-study research design.....89
4.2.1. Case selection.....90
4.3. Methods.....92
4.3.1. Selection of interviewees.....93
4.3.2. Informed consent.....97
4.3.3. Practical conditions of the research.....97
4.3.4. Interview guide.....99
4.3.5. Transcriptions and translation.....103
4.3.6. Coding.....104
4.4. Quality in qualitative research.....108
4.4.1. Validity.....109
4.4.2. Reliability.....111
4.4.3. Generalizability.....112
4.4.4. Limitations in data collection methods.....113

5. Findings and analysis I: Internet-mediated communities and institutional carriers 115
5.1. Ideal versus actual models 120
5.2. Carriers of segregated decision-making processes 126
5.2.1. Regulative symbolic systems 127
5.2.2. Normative symbolic systems 129
5.2.3. Cultural-cognitive symbolic systems 130
5.2.4. Regulative relational systems 132
5.2.5. Normative relational systems 134
5.2.6. Cultural-cognitive relational systems 135
5.2.7. Regulative routines 136
5.2.8. Normative routines 137
5.2.9. Cultural-cognitive routines 138
5.2.10. Regulative artefacts 139
5.2.11. Normative artefacts 142
5.2.12. Cultural-cognitive artefacts 143
5.3. Concluding remarks on findings I 145

6. Findings and analysis II: Logics of justification and action 148
6.1. Reproducing institutions in the situation: Arguments and tactics 150
6.1.1. Regulative symbolic systems 150
6.1.2. Normative symbolic systems 152
6.1.3. Cultural-cognitive symbolic systems 155
6.1.4. Regulative relational systems 161
6.1.5. Normative relational systems 168
6.1.6. Cultural-cognitive relational systems 174
6.1.7. Regulative routines 178
6.1.8. Normative routines 181
6.1.9. Cultural-cognitive routines 183
6.1.10. Regulative artefacts 186
6.1.11. Normative artefacts 189
6.1.12. Cultural-cognitive artefacts 192
6.2. Concluding remarks on findings II 196

7. Cross-case analysis: Comparing communities 197
7.1. Cross-case analysis by category 200
7.1.1. Regulative symbolic systems 200
7.1.2. Normative symbolic systems 202
7.1.3. Cultural-cognitive symbolic systems 203
7.1.4. Regulative relational systems 205
7.1.5. Normative relational systems 208
7.1.6. Cultural-cognitive relational systems 210
7.1.7. Regulative routines 211
7.1.8. Normative routines 212
7.1.9. Cultural-cognitive routines 212
7.1.10. Regulative artefacts 213
7.1.11. Normative artefacts 214
7.1.12. Cultural-cognitive artefacts 216
7.2. Differences and similarities in the cross-case analysis 217
7.3. Concluding remarks 220

8. Concluding discussion: Understanding the diffusion of social structures through carriers in Internet-mediated communities 222
8.1. Empirical contribution: The influence of institutional carriers 225
8.1.1. The role of structure 226
8.1.2. The role of agency 233
8.1.3. Interactions between carriers, arguments and tactics 244
8.1.4. Valuation of Scott's framework 248
8.2. Theoretical contribution: Introducing agency to Scott's framework 251
8.3. Research limitations 256
8.3.1. The conceptualization of the empirical object 257
8.3.2. Contextual ambiguities 259
8.4. Concluding remarks on contributions and future research 261
8.4.1. Future research 264

9. References 268

1. Introduction: Research groundings

This thesis focuses on researching the new collectivities – virtual communities – which emerge from the Internet interactions. A review of current literature[1], discloses a gap in the academic research on this domain, specifically on how institutions influence virtual communities, which this research will address. In more precise terms, this research is concerned with the influence of institutions on the governance structures of virtual communities, particularly on their decision-making processes, issues that have not received enough scholarly attention.

These claims are further elaborated in the next sections of this introduction. The first section, below, explains important transformations in the contemporary societies that are related to the intensification of interactions in economic, political, social and cultural levels, which are enabled by the development in transport systems and information and communication technologies (ICTs). It also explores that through computer-mediated interactions people have voluntarily created a large variety of virtual communities, which affect how they experience their social life through relations which are not necessarily geographically bounded.

The second section develops the reason why this thesis is concerned with the governance structures of virtual communities. Although some authors relate the Internet interactions to the emergence of network-like forms of organizing, this link is questioned by others, who emphasise the resilience of institutionalised hierarchical social structures in online environments. I have undertaken a pilot study with a group of Internet-mediated communities, to gain a preliminary idea of how these collectivities accommodate an eventual conflict between network and hierarchical forms of organizing. The pilot revealed that these communities defend the network model of organizing as being the most adequate for them. Questioned about their practices, nonetheless, community

[1] This theme is discussed in chapter 2.

members expose that they adopt more hierarchical governance structures, displaying a gap between their actual behaviour and their ideal models. This dissociation is especially clear in their decision-making processes, as these communities keep segregated social structures – which excludes the majority of members from making decisions – an instance of centralization which is characteristic of hierarchical organizations.

The third section in this Introduction argues that, interpreting the pilot study through the theoretical lens of new institutionalism, the governance structures of these communities are influenced by institutionalised hierarchical models. Thus I propose to study the processes of institutionalisation of virtual communities through analysing the governance structures related to their decision-making processes. This section explains also the reasons for choosing new institutionalism as a theoretical framework of this research. In particular, I argue that the focus on institutional carriers is a helpful means of understanding in detail the process of institutionalisation in virtual communities.

Next, the fourth section spells out the research domain and empirical object (a group of four Brazilian environmental-education Internet-mediated communities), the research approach and the research question of this thesis. This section also summarizes the initial contribution this research aims and the inherent limits of a theory-driven research, as proposed here.

Finally, in the last section, this Introduction outlines the subsequent chapters of this thesis.

1.1. The emergence of virtual communities

The last decades have witnessed significant transformations, in economic, political, social and cultural levels. At a broad macro level, there is a continuous debate on what has been called "the globalization" of contemporary societies (Croucher, 2004; Giddens, 1990; Webster, 2002). Although the term globalization has been used to discuss a large range of phenomena (Croucher, 2004: 9), the concept has often been related to ideas of global

interconnections and interdependences, across time and space, from the production of goods and services, to the flow of information, capital and people (Giddens, 1990: 64; Webster, 2002: 68; Tomlinson, 1999: 2-3; Walsham, 2000: 291; McGrew, 2000: 347; Croucher, 2004: 13-14). This process of interconnecting distant localities and times is underpinned by the development of material infrastructures, such as the transport systems and information and communication technologies (ICTs) (Urry, 2003: 4-5; Croucher, 2004: 15; Slevin, 2000: 200; García, 2002: 41; Castells, 1996: 1; McGrew, 2000: 348; Webster, 2002: 73).

Other authors discuss the transformations in contemporary societies from the standpoint of the relevance of information and knowledge. For these authors, contemporary societies in developed countries have entered a new stage, often referred to as the *information society*[2], in which information and knowledge acquire increasing significance in the processes of production and innovation, in economic and cultural areas, at levels that have not been observed before (Burnett and Marshall, 2003: 32; Webster, 2002: 2, 26; Castells, 2000 [1996]: 17; Feather, 2003: 3-14).

The idea of an information society derives from Daniel Bell's (1973) concept of post-industrial society (Lyon, 1988: 3; Webster, 2002: 2, 26; May, 2002: 7). Bell (1973: 13-17) claims that industrial societies have developed towards societies of services, with the majority of people working in industries such as finance, transport, education and government, rather than the production of physical goods. In addition, Bell (ibid: 20) argues that theoretical knowledge becomes a central source of innovation in this society, as theory gains primacy over empiricism, and knowledge is increasingly codified in abstract systems.

[2] The concept of information society has been disputed. The main criticisms are against arguments that information and communication technologies are responsible for a discontinuity of processes, or that information is more relevant in contemporary societies. For more details see May (2002: 1-2, 17), Black (2003: 18-30), Muddiman (2003: 44-50) and Lyon (1995: 59).

From a second angle, Beniger (1986: 6-13, 21-25) argues that the information society emerges from the control revolution. Developing a historical framework, Beniger submits that many technologies, processes and structures (such as computers and bureaucracy) have been developed to permit a better control of the increasing volume of information, which are the outcome of the globalization of markets, initiated in the 1840s by the expansion of railroads, steam ships and telegraph. Gradually, the information sector becomes more relevant than other industries, argues Beniger (ibid: 21), drawing upon Fritz Machlup's (1962) work[3]. For Beniger (ibid: 25, 435-436), the information society emerged in the early 1970s from this historical process of controlling information, and through the greater development of information technology which afforded the expansion of the information economy.

The increasing ubiquity of ICTs, notably the Internet, is a fundamental element of the transformations towards an information society, owing to their role in connecting people, and permitting flows and controls of data and information (Webster, 2002: 73; Croucher, 2004: 15; Burnett and Marshall, 2003: 18; Day and Schuler, 2004: 9). Castells (2000 [1996]: 1) strongly pictures this new scenario: "A technological revolution, centred around information technologies, is reshaping, at accelerated pace, the material basis of society. Economies throughout the world have become globally interdependent, introducing a new form of relationship between economy, state and society, in a system of variable geometry".

Many scholars have researched the consequences of ICTs in society. Specifically in relation to the Internet impact, many are concerned with the development of those social collectivities[4] that emerge from voluntary computer-mediated interaction, which

[3] See also Webster (2002: 12) and May (2002: 3-5) on the relevance of Machlup's work, and how Marc Porat (1977) has refined this idea. Machlup is also one main reference in Bell's work (1973), in the development of the concept of post-industrial society.

[4] Following Scott (1998: 183), this thesis understands a *collectivity* as an identifiable portion of the social order which has boundaries and distinguishes it from other instances of social organization. Collectivities (such as informal groups, communities, organizations, and even societies) thus should have a bounded

generically have been called *virtual communities* (Rheingold, 2000 [1993], Castells 1996, 2001; Steinmueller, 2002; Mansell and Steinmueller, 2000). In a very broad definition, any group that interacts through computer-mediated communication could be called a virtual community (which are also called online communities, virtual or online social networks, and virtual or online community networks). Indeed, the term has been used to describe very different groups with distinct forms of interaction, and it is under dispute (Graham, 1999: 131; Preece, 2001: 347; DiMaggio *et al.* 2001: 317; Komito, 1998: 97; Kling and Courtright, 2003: 221) (see discussion in section 2.1). More precisely, Graham (1999: 132, 142) restricts the term to those collectivities which have voluntary membership of people who have common interests and adhere to a set of rules. This thesis specifically adopts Graham's concept (see more details in section 2.1).[5]

Graham (1999: 24, 37-38) and Delanty (2003: 165, 168) have emphasised the extent to which the Internet has affected social interactions, permitting people to assume more active roles and to form social groups not restricted to face-to-face, geographically bounded interactions. Many authors, when discussing virtual communities, highlight how the Internet empowers people, opening channels to give and receive social, emotional and intellectual support (Butler, 2001: 350; Preece, 2001; Rheingold, 2000 [1993]; Wellman *et al.*, 1996: 220; Nip, 2004; Komito, 1998: 98).

Scholars, nonetheless, are divided about the consequences of the Internet. As summarized by DiMaggio *et al.* (2001: 310-322), different authors emphasise either utopian or dystopian viewpoints, on how this network affects: social inequality (see van Dijk, 1999: 2; and Castells, 2001: 247); the formation of social capital (see Hampton and Wellman, 2002; Nip, 2004: 410-411; and Falk, 1997: 289); public debate (see Fernback, 1997: 37-

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network of social relations, and a normative order that is applicable to those who participate in this network.

[5] In this thesis, two main terms will be used to refer to these new collectivities. When the issue in discussion is generically any kind of collectivity that emerges from voluntary online interactions, this thesis uses *virtual community*. When the discussion is about the chosen empirical object of this research, this investigation uses *Internet-mediated communities*, drawing upon Bellini and Vargas (2003) and Graham (1999). The conceptualization of virtual communities is further discussed in chapter 2.

38; van Dijk, 1999: 2-3; Wellman, 2001: 39; Norris, 2004: 33; and Baym, 1998: 36); and civil society movements (see McConnell, 2000: 2; Gómez, 1998: 224; Diani, 2000; Stoecker, 2002: 150-153; and Kahn and Kellner, 2004: 87).

1.2. Contrasting features between ideal and actual decision-making processes

This research studies the phenomenon of virtual communities, focusing on their decision-making processes. This interest is based on two pillars, the academic work on the governance of computer-mediated collectivities, such as virtual communities, and the empirical data, obtained in a pilot study, on how six Brazilian environmental-education Internet-mediated communities (Rebea, Repea, Reasul, Remtea, REA/PB and RAEA[6]) take decisions. This section discussed these pillars.

Some authors have invoked the metaphor of networks to account for the new social collectivities and organizational forms that emerge from computer-mediated interactions (Castells, 2000 [1996]: 500; 2001; 2000: 15; Rifkin, 2000: 4, 17, 23; Walsham, 2000: 291; Slevin, 2000: 22-23). For many authors, the Internet is the precursor of non-hierarchical forms of organizing (Fukuyama, 1997: 64): network organizational structures which distribute the decision making among their nodes, even within formal organizations, in such a way that at least hierarchies become flatter and less centralized (van Dijk, 1999: 93; Wellman and Hampton, 1999: 648; Day and Schuler, 2004: 3).

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[6] Rebea – Rede Brasileira de Educação Ambiental (Brazilian Environmental-Education Network); site: http://www.rebea.org.br. Repea – Rede Paulista de Educação Ambiental (São Paulo Environmental-Education Network); site: http://www.repea.org.br. REASul – Rede Sul Brasileira de Educação Ambiental (Brazilian South-Region Environmental-Education Network); site: http://www.reasul.org.br/mambo. Remtea – Rede Mato-Grossense de Educação Ambiental (Mato Grosso Environmental-Education Network); site: http://cgi.ufmt.br/remtea/. REA/PB – Rede de Educação Ambiental da Paraíba (Paraíba Environmental-Education Network); site: http://www.prac.ufpb.br/reapb/. RAEA – Rede Acreana de Educação Ambiental (Acre Environmental-Education Network); site: http://www.raea.ufac.br/. Sites last accessed in June 2006.

Similarly, Castells (1996: 29, 153, 172, 469; 2000: 5-9, 19; 2000 [1996]: 1) contends that the ICT revolution since the 1980s is so profound that it reshapes the material basis of societies, providing an environment for the emergence of a new social structures, which the author relates to the *network society*. Castells (ibid) argues that, although there were network organizations before this period, the new ICTs provide the material basis for the expansion of the network forms of organizing throughout all social spheres. Delanty (2003: 182) also states that virtual communities are more democratic, establishing horizontal forms of organizing. In sum, these authors point out that the network logic of organizing challenges one of the core pillars of hierarchies: the centralization of decision-making processes, as proposed by the classical work of Weber (1922) (cited in van Dijk, 1999: 93).

Nonetheless, this image of linking Internet social collectivities to network forms of organizing is not unanimous. For instance, Kallinikos (2003b: 2-3) argues that the academic literature is not clear about what constitutes a network form of organizing as the same term has been used unspecifically to refer to: informal groups; virtual communities; flat organizations; and temporary electronically-sustained alliances, as counter-examples to the hierarchical organization. The general idea that networks are decentralized and permit access for all its nodes does not help us understand the dynamic processes of decision making within such organizations, and whether networks really challenge the hierarchies and markets as an alternative form of organizing (ibid: 3, 5). Slevin (2000: 52) also criticizes the indiscriminate notion of network as organizational forms as being too simplistic to explicate situated social practices and Fukuyama (1997: 64-66) says it lacks precision. Along a similar track, Courpasson and Reed (2004: 11) question the very existence of the network form of organizing, and argue that it is necessary to be more realistic about the durability of hierarchical organizations in contemporary societies.

Other authors question whether this network logic applies straightforwardly to virtual communities, especially when coordination of action is necessary. For Jones (1995: 23, 29-30), for instance, it is not adequate to imply that any electronic space is democratic

and egalitarian, and breaks hierarchical structures. Steinmueller (2002) and Graham (1999) challenge these ideals of egalitarianism, highlighting that these collectivities have their own, distinct, models of authority. Steinmueller (2002: 24) affirms that the coordination of individual actions in virtual communities demands the presence of a procedural authority that makes decisions. The author emphasises, nonetheless, that this procedural authority may mimic different organizational forms, from hierarchies to participatory democracy. Graham (1999: 134, 142) comments that, independently of having a person who assumes this role, having norms and rules is enough to characterize this authority. In sum, Steinmueller and Graham do not take for granted either a hierarchical, centralized model of decision making in virtual communities or a participatory one.

Indeed, research shows that virtual communities may have both hierarchical and participatory governance models. For instance, open-source communities have coordinators (leadership members) who decide which changes are released, thus averting conflicts and community fragmentation through a hierarchical form of organizing, i.e. segregated decision making (Steinmueller, 2002: 52; Bonaccorsi and Rossi, 2003: 1246; Sharma, Sugumaran and Rajagopaian, 2002: 10; Ljungberg, 2000: 214; Demil and Lecocq, 2006: 1454-1460). Juris (2005: 197) relates, in a counter-example, how anti-corporate globalization social movements use Internet tools for coordinating their activities through decentralized decision-making processes, permitting the nodes to keep their autonomy, even while they need to converge as a group in relation to specific issues (see also Pickard, 2006, on how Indymedia organizes its decision-making processes).

1.2.1. Pilot study

In sum, the referred literature points out that the governance structures of virtual communities may assume diverse organizational forms, from the more hierarchical to the more decentralized. Thus, the question I wish to investigate is in which circumstances these structures emerge. It was with this question in mind that I conducted a pilot study, with a group of six Brazilian environmental-education Internet-mediated communities, in

order to understand the roots of their governance models, and thus to propose and design my substantive investigation.

These communities consider themselves civil society networks (informal social organizations, without legal status, based on voluntary, non-anonymous membership) formed by individuals who generally work in universities, educational entities, non-governmental organizations (NGOs) and government offices. Students, who share a common interest in relation to environmental education, may also be members. Communities depend mainly on voluntary work. Some of their projects, nonetheless, have received government funding to pay for the work of some members, and private and public organizations (such as universities and NGOs) have also supported these communities with material and financial resources.

The pilot was based on 13 in-depth, semi-structured interviews, undertaken in 2004[7] and 2005, with representatives of these communities, and of an NGO, called Rits[8], which provides technical and logistical support to some of these communities. The community members were interviewed twice (once in 2004 and once in 2005), and the Rits member once giving a total of 13 in-depth telephone interviews.

Although the pilot investigation was very open, permitting interviewees to talk about many issues related to governance structures, interviewees emphasised that the processes of making decisions were the cornerstone of their governance model, which became the focus of this present work.

[7] This first set of seven interviews had been done with the objective of elaborating a dissertation to the MSc New Media, Information and Society at London School of Economics and Political Science, which was concluded in 2004. The second set of six interviews, in 2005, complemented the first set and provided the necessary data to ground the current research.

[8] Rits – Rede de Informações para o Terceiro Setor (Information Network for the Third Sector); site: http://www.rits.org.br/. Site last accessed in June 2006.

The data collected in this pilot clearly shows a level of incompatibility between how community members described their decision-making processes (called here their *ideal model* of decision making) and how they, in practice, decided community issues (called here their *actual model* of decision making). To summarize, members of these communities, when talking abstractly about their ideal model of organizing, stated that they organize themselves in networks, understood as egalitarian spaces of decision making, in which all members have equal say and weight in the definition of a final resolution made in name of the community. They clearly opposed what they call hierarchical model of decision making: having segregated decision-making processes, in which some people have power to decide on behalf of the whole community. These same members, nonetheless, when describing the actual decision-making processes, relate procedures in which decision making is concentrated in the hands of some members.

In describing their ideal model, the interviewees emphasised that the communities intend to follow network forms of organizing. The communities explicitly inform members of this intention (through their websites for instance), and interviewees often referenced Martinho's book (2003) to describe how their communities are organized in a network model. This book, sponsored by WWF Brazil, and written with the direct collaboration of representatives of two of these communities[9], states that one of the most important features of a network organization is its capacity to operate in non-hierarchical models: adopting horizontal patterns of coordination, opposing what appeared to be the natural (vertical) model of organizing human relationships (Martinho: 2003: 16-17).

The interviewees also argued that the goal of creating network organizations stems from the political assumptions which underlie social movements: the ideals of participatory democracy, in which individuals have voice directly, and not only through their representatives (in opposition to the representative democracy). Indeed, scholars point out that most social movements, which have emerged since the 1960s, such as feminism, gay and lesbian rights and environmentalism, favour decentralized forms of organizing, preferring egalitarian structures in which all members participate in decision making,

[9] Rebea (Rede Brasileira de Educação Ambiental) and Repea (Rede Paulista de Educação Ambiental).

instead of having a segregated group that takes decisions in name of others (Goodwin and Jasper, 2003: 165-166; see also Pickard, 2006: 319; and Epstein, 1996: 128-129). For instance, Pickard (2006: 316) and Polletta (2002: vii-ix) describe how the Indymedia global network and the movements against the globalization adopt this model of participatory democracy – consensus decision making, following values of egalitarianism among members. As both authors explain, in this model members deliberate directly, not delegating this function to decision-making elites (or elected leaders), thus all members are included in decentralized decision-making processes, which should respect diversity of thinking, and be open and transparent to permit accountability (ibid).

Contrasting with the ideal of following a participative model, in practice the decision-making processes in these six Brazilian Internet-;mediated communities are segregated – some members organize themselves on closed discussion lists which are not accessible to other members, forming a group responsible for decisions[10]. This procedure thus denies in practice the idea of participatory democracy. Indeed, their practice is not even related to the idea of representative democracy, as the studied communities do not choose their leaders by voting, do not have rules of power alternation, and do not clarify how the leaders are supposed to represent the interests of the communities (Pickard, 2006; Urbinati, 2006). Thus, in spite of using the concept of participatory democracy to explain the principles of their organizational structures, in practice these organization do not follow any criterion which could proximate their models with the democratic schemas.

These segregated groups take decisions on different issues such as: how the communities should relate to political debates; where to invest resources; who may represent the community to outsiders (spokespersons), including deciding who negotiates funding with government offices; who moderates the lists; who publishes on the websites; and who can be a member (although any person can join these communities, membership should be

[10] In this thesis, the members who are organized through segregated discussion lists, with the objective of making decisions, are called management or leadership members (or groups). The members who have access exclusively to the general lists are called ordinary members.

approved by the leadership groups, which also may decide to moderate or exclude members from the discussion lists).

Indeed, this segregated model (centralized decision making) resembles more a hierarchical organization. Analysing organizations in general, Simon (1997 [1945]: 7) concludes that organizations substitute individual decisional autonomy for organizational decision-making processes in order to improve the coordination of collective tasks. Thus organizations determine who has authority to make decisions on behalf of others, defining who is superior and who is subordinate, such that, in case of disagreement, the superior has the last word, independent of the strength of arguments (ibid: 7, 179, 182). Administrative organizations delegate tasks, generally following a hierarchical division of labour. Supervisory personnel become specialized in decision making, characterizing the presence of centralized decision-making processes (ibid: 7, 15). For Simon, this model of coordinating activities through hierarchical decision-making processes can be applied to voluntary, religious and governmental organizations as well as business ones (ibid: 15).

By this stage, it was clear that in spite of having idealised models of constructing decision-making processes which would resemble network-like forms, reflecting ideals of participatory democracy and equalitarianism, these communities were following an institutionalised, hierarchical model, in the sense of having a segregated group responsible for resolutions. Moreover, the pilot data revealed other aspects that could help to understand how this centralized model has been created, in spite of their declared intentions of constructing network-like forms of organizing. For instance:

- Four interviewees (Rits, RAEA, Reasul and REA/PB) accepted that formal organizations influence the power relations within the communities. This influence derives from these communities, although informal and voluntary, having strong links with formal organizations, such as government offices, federal universities and NGOs. These formal organizations give material (such as offices

and computers) and financial support to the communities, empowering members employed by them relatively to other members.

- One interviewee (RAEA) alleged that some members are cautious in expressing their opinions in these communities, avoiding opposing the interests of organizations to which they are affiliated.

- Four interviewees (RAEA, Rebea, Repea and Reasul) justified the presence of segregated decision-making processes in projects that are funded by the government, because the legislation demands a level of accountability that would not be possible without some level of centralization in decisions.

- Two interviewees (Repea and Reasul) argued that society demands formal representation from their communities, thus justifying the presence of formalized roles, such as executive secretary, as a way of facilitating and legitimating the dialogue with non-members, although the communities theoretically defend the equal status of all members.

- Three interviewees (Rebea, Repea and Remtea) took for granted the effectiveness and rationality of segregated decision-making processes to avoid inconsistent behaviour, conflicting information and delays in dispute resolution, in spite of these arrangements conflicting with their proclaimed model of promoting a network form of organizing. Interviewees faced difficulties in spelling out alternatives to their segregated decision-making processes.

- Five interviewees (Rebea, Repea, Reasul, Remtea and RAEA) stated that members followed traditional hierarchical patterns of interaction, wanting community leaders to take initiatives, although it could be otherwise as any member could, in theory, try to take initiatives.

- Five interviewees (Rebea, Repea, Remtea, RAEA and Reasul) highlighted that Internet tools, which support their communication, influence the kind of governance structure communities adopt. For instance, groupware discussion lists (such as Yahoo!) automatically give special status to the person who creates the list, such as the right of: (i) extinguishing the list without consultation to members; (ii) defining who can be owner or moderator and with what rights; and (iii) moderating the messages of members. Furthermore, the architecture of their sites permits restricting the right of publishing to a few community members, through limiting the distribution of passwords.

Building on the academic debate and the pilot study, this research proposes to investigate how hierarchical institutions influence decision-making processes in Interned-mediated communities.

To summarise, this section has firstly depicted the academic debate on the governance of collectivities that emerge from computer-mediated interactions. On the one hand, Castells, (2000 [1996]), Rifkin, (2000) and other authors point to the emergence of network organizational forms. On the other hand, scholars, including Fukuyama (1997) and Kallinikos (2003b), demand more details if we are to accept that such a network model exists and represents a challenge to other organizational constructs, such as hierarchies and markets. This debate also concerns the governance of virtual communities. Empirical research demonstrates these communities may either develop participatory-democratic models, or cultivate hierarchical structures (Jones, 1995; Steinmueller, 2002; Graham, 1999; Bonaccorsi and Rossi, 2003; Sharma, Sugumaran and Rajagopaian, 2002; Ljungberg, 2000; Juris, 2005; Pickard, 2006).

Secondly, I have presented a pilot study on how a group of Brazilian environmental-education Internet-mediated communities organizes its decision-making processes. The empirical findings indicate that community members state their intention to construct network (horizontal) forms of organizing: social structures in which all members have a

say in resolutions that affect the collective. The pilot suggests, with a closer scrutiny of how decisions are effectively made, that these communities adopt segregated decision-making processes, an instance of centralization, clearly resembling Simon's (1997 [1945]) description of hierarchical structures.

This topic is developed in the next section.

1.3. The relevance of studying the institutional influence in virtual communities

This research thus proposes to study four Brazilian environmental-education Internet-mediated communities in order to gain a better understanding of how hierarchical institutions influence virtual communities in their establishment of decision-making processes. The research will apply the literature on institutions[11], in particular the authors that follow the sociological branch of new institutionalism. The research will show that the presented phenomenon clearly resembles a process of institutionalisation of governance structures (isomorphism), as institutionalised social structures[12] influence emergent ones.

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[11] The concepts of institutions and institutionalisation are discussed extensively in chapter 3. Following Scott's (2001: 48) definition: "*Institutions are social structures that have attained a high degree of resilience [...] [which] are composed of culture-cognitive, normative, and regulative elements, that, together with associate activities and resources, provide stability and meaning to social life.*" This research also considers that there is a process of institutionalisation when patterns of action are repeated, acquiring a collective taken-for-granted meaning for actors, and are diffused through settings across time and space, drawing upon Berger and Luckmann (1967 [1966]), Scott (1998), DiMaggio and Powell (1991a), and Avgerou (2000).

[12] The concept of social structure is discussed in chapter 3. In brief, this research follows Giddens's structuration theory (1979, 1984), in understanding social structures as rules and resources which structure behaviour, being memory traces (knowledge) about how action should be performed (Giddens, 1979: 64; 1984: 17, 25; Porpora, 1998 [1989]: 345). In this approach, nonetheless, social structures influence rather than define behaviour, as social actors may change old structures (ibid). This concept is compatible with the adopted theoretical lens on new institutionalism and institutional carriers, as suggested by W.R. Scott (2001: 67, 75) and J. Scott (1995: 214).

The pilot study reinforces the idea that institutions may influence action and structure through coercion (such as the direct pressure of organizations that support communities) and imitation (such as the reproduction of hierarchical structures, contradicting the espoused horizontal ones). DiMaggio and Powell (1991b [1983]) call this process institutional isomorphism: organizational structures and processes become increasingly similar through time, under certain circumstances (see also Scott and Meyer, 1994: 2-4). In addition, the pilot study suggests that taken-for-granted models may sustain institutional hierarchical structures, as they make alternatives unimaginable, as proposed by new institutionalism (Avgerou, 2000: 236-237; Berger and Luckmann, 1967 [1966]: 71-75, 82; Scott, 1998: 135; DiMaggio and Powell, 1991a: 21). These institutional influences occur despite agents having the freedom to do otherwise (Scott, 2005: 471; March, 1994: 73-76; Jepperson, 1991: 159).

More precisely, this research applies Scott's (2001) framework on institutional carriers to understand how hierarchical institutions influence communities in their decision-making processes. As will be discussed in chapter 3, scholars relate the concept of an institutional carrier to social strata, actors, organizations, rules, norms, cognitive schemas and artefacts (among other social constructs) that carry institutionalised patterns of behaviour from setting to setting in time and space (Berger and Luckmann, 1967 [1966]; Weber, 2002 [1930]; 1978 [1956]; Berger, Berger and Kellner, 1973; Jepperson, 1991; Meyer, 1994; DiMaggio and Powell, 1991b [1983]; and Scott, 2001). In this direction, Scott (2001: 77) provides a very detailed framework on 12 categories of institutional carriers, which have regulative, normative and cultural-cognitive features, and act through symbolic systems, relational systems, routines and artefacts; this framework will be used to illuminate the researched phenomenon.

As noted earlier, the preliminary data obtained in the pilot study indicate that at least some institutional carriers are present in the institutionalisation of decision-making processes in these Internet-mediated communities, influencing their social structures. For instance, Brazilian *legislation* demands that these informal collectivities have a formal representative (such as an NGO or a university) in order to be eligible for government

funding, thus forging differences among members. The *roles* and *authority* that members have in society, derived from their organizational affiliations or from their prestige in society, affect their power in these communities. The ideas that hierarchical models are more efficient and rational, and that community leaders are responsible for taking the initiatives (*cognitive schemas*) limit the possibilities of envisaging other organizational models. Finally, *Internet tools* embed some rules (such as the possibility of moderating members in discussion lists and delimiting authority to publish contents on websites), which encourage a leadership group to appropriate these technologies in ways which favour centralized structures of decision making.

This research also draws upon the literature on virtual communities to conclude that in spite the recognition of the relevance of studying institutional influences in virtual communities (DiMaggio *et al.*, 2001; Venkatesh, 2003), few studies have adopted this approach (with valuable exceptions such as Matzat, 2004, and Souza *et al.*, 2004) (this literature gap is explored in section 2.4). Moreover, none of these academic studies either reviews how institutions affect decision-making processes in virtual communities, or adopts new institutionalism as a theoretical framework. Thus there is a lacuna in the academic work to which this research will contribute.

Furthermore, this research draws upon Hasselbladh and Kallinikos (2000: 699), arguing that it is fruitful to analyse the process of institutionalisation by paying attention to *durable social artefacts*, rather than trying to understand such a complex phenomenon only through abstract concepts. Indeed, the framework on institutional carriers matches this entreaty to objectify institutions in specific social constructs, such as laws, values systems, authority systems, roles, standard procedures and objects (such as Internet tools), following a micro-level approach, in Berger's and Luckmann's (1967 [1966]) mode, in contrast with the more abstract macro-level approach (Czarniawska-Joerges, 1992: 56). These claims are clarified in chapter 3, when this research's theoretical framework is presented.

The next section will detail the main features of the current research.

1.4. Research design

This section discusses this research design in more details. The first two subsections present the research domain and the empirical object of study (a group of four Brazilian environmental-education Internet-mediated communities). The third and fourth subsections describe the research approach and the research question. The final subsection clarifies the initial contribution of this research and the inherent limits of a theory-driven thesis.

1.4.1. Research domain

This research is concerned with the domain of *virtual communities*, broadly understood here as any kind of social collectivity that emerges from voluntary computer-mediated interactions (drawing upon Rheingold, 2000 [1993], Steinmueller, 2002, and Mansell and Steinmueller, 2000). As indicated above, authors use the concept of virtual community, and other similar ones, to refer to very different social groups that emerge from Internet interactions. Thus this research adopts this term for its broad domain, in order to locate its contribution in the scholarly literature.

This thesis, nonetheless, agrees with DiMaggio *et al.* (2001: 317) that researchers should define clearly the type of virtual community they study, avoiding mixing different collectivities in the same category. In accordance with this guidance, this work seeks to define more precisely the nature of the virtual community that is being studied here.

The next subsection will outline two aspects of the domain. First, this research draws upon Graham (1999) to argue that the computer-mediated collectivities studied here may be defined as *communities*. Second, this research agrees with Bellini and Vargas (2003) that the term *Internet-mediated* is preferable to virtual or online, when discussing the referred collectivities, as it is more precise in defining the effective communication channel of these communities.

1.4.2. Research empirical objects

The empirical objects (units of analysis, using the terms of Patton, 2002: 229; and Yin, 2003: 26) of this research are four Brazilian environmental-education Internet-mediated communities. It is thus necessary to explain why the concept of Internet-mediated communities applies for the studied collectivities.

First, these social collectivities are communities following Graham's (1999) conceptualization that any community should have defined boundaries in accordance with three criteria: (i) members should be bound together voluntarily; (ii) they should have common interests; and (iii) they should accept to adhere to rules, such as procedures of admission and exclusion (see section 2.2 for a fuller discussion of the conceptualization of communities as bounded social collectivities).

Indeed, the chosen communities exhibit these three elements. Membership is voluntary, and any person who is interested in environmental education can ask for admission. The communities have a common interest: the theme of environmental education, and issues related to professionals of this field in Brazil, such as legislation, best practices, courses and job offers. The communities also have rules. For instance, in order to register, the person should supply personal data, as discussion lists are not anonymous. In addition, members are supposed to cultivate an adequate level of politeness in online interactions (netiquette), and to keep discussions restricted to the group interest. Furthermore, communities also have rules for excluding or punishing verbally members who do not comply with current norms.

Second, following Bellini and Vargas (2003), the chosen communities are called Internet-mediated, rather than virtual, because the majority of their interactions are through the Internet. These groups, nonetheless, occasionally have face-to-face meetings, and their members can communicate through other channels, such as the telephone. The most common adjective to refer to these communities in the literature are virtual and online, but these terms do not clarify whether the channel is the Internet.

The studied communities are informal organizations, self-described as networks and not having any kind of legal existence. They have received, nonetheless, financial and material support from formal organizations, such as government offices, universities and NGOs. These communities also have members who work on these formal organizations, and indeed they have stemmed from inter-actions between government offices, universities and NGOs. In spite of these characteristics, interviewees still understand these communities as independent social movements (networks), since they are formally independent of these other organizations, and members participate voluntarily (participation is not linked to their professional duties).

Specifically, this research focuses on four communities[13]:

a) **Rebea (Rede Brasileira de Educação Ambiental)** (*Brazilian Environmental-Education Network*): in existence since 1992, active at a national level. The community had around 380 members on the general list and around 600 members on Orkut – the Google's online social network[14]. Rebea management group had around 100 members. Site: http://www.rebea.org.br .
b) **Repea (Rede Paulista de Educação Ambiental)** (*São Paulo Environmental-Education Network*): in existence since 1992, but active more regularly since 1999, in the State of São Paulo. The community had around 560 members on the general list and 90 members in the management group. Site: http://www.repea.org.br/ .
c) **Reasul (Rede Sul Brasileira de Educação Ambiental)** (*Brazilian South-Region Environmental-Education Network*): in existence since 2002, active in three states of the Brazilian south (Rio Grande do Sul, Santa Catarina and Paraná). The community had around 2,000 members on the

[13] The cited membership numbers are related to April/June 2006.

[14] Some members are in both lists.

general list and around 100 members in the management group. Site: http://www.reasul.org.br/mambo/.

d) **Remtea (Rede Mato-Grossense de Educação Ambiental)** (*Mato Grosso Environmental-Education Network*): in existence since 1996, active in the State of Mato Grosso. The community had around 200 members on the general list and around 25 members in the management group. Site: http://cgi.ufmt.br/remtea/index.htm.

For the sake of simplicity, this investigation refers to its empirical object as Internet-mediated communities, thus avoiding repeating that they are Brazilian environmental-education networks. When cited individually, this research uses their acronyms (Rebea, Repea, Remtea and Reasul). The reasoning behind the choice of these four communities to do a multiple case-study is given in subsection 4.2.1.

Furthermore, these communities are organisationally independent of each other. Repea, Reasul and Remtea are associated to Rebea, but one can be member of Repea, Reasul and Remtea without being member of Rebea, as membership is individual and voluntary (not defined by any kind of affiliation). Rebea is constituted as a network of networks, inviting all similar Brazilian Internet-mediated communities to associate to this national network. Local, regional and state communities, nonetheless, take individual decisions on affiliation and one community does not have formal power to define the activities of other communities. Thus although Rebea acts at a national level this does not mean that it has special rights to define how the other communities work in their respective areas.

It is also relevant to note that the studied communities have gained inspiration from the United Nations Conference on Environment and Development, held in Rio de Janeiro (Brazil) in 1992 (http://www.un.org/geninfo/bp/enviro.html). Alongside this conference, there were parallel forums to discuss related issues, such as the Global Forum of NGOs that developed the *Treaty on Environmental Education for Sustainable Societies and Global Responsibility* (http://csdngo.igc.org/alttreaties/AT05.htm). This Treaty suggests fostering the emergence of social movements to spread its proposals, such as creating

networks of environmental educators, and grounding these movements in their grassroots. Another document emerged from the Global Forum, the *Communication, Information, Media and Networking Treaty* (http://csdngo.igc.org/alttreaties/AT06.htm), has prompted the NGOs to improve their communication channels, including computer-mediated interaction, and promoted network forms of organizing and sharing information as a way of amplifying their voice in decision-making processes in local and global levels (Hassan, 2004: 108).

Social and civil society movements have become increasingly important in contemporary societies, which have been widely recognized by international organizations such as the United Nations and the World Bank (Castells, 2001: 138, 142-143; Stoecker, 2002: 150-153; and Kahn and Kellner, 2004: 87)[15]. Scholars also emphasise the role of the Internet in supporting social movements (McConnell, 2000: 2; Gómez, 1998: 224; Horton, 2004: 735-737, 740-744; Back and Stark, 2005: 37-39, 41; Garrett, 2006: 202-206).

These aspects help to define the context in which the studied Internet-mediated communities have emerged, based on the appropriation of computer-mediated communication channels, as well as indicate the origins of their goal of creating network forms of organizing, through supporting and amplifying the political demands of these networks of environmental educators, since the United Nations Conference on Environment and Development, in 1992.

In practice these communities organize themselves to diffuse pieces of information and knowledge, to debate relevant technical and political issues in the field of environmental education and to mobilize themselves politically as social movements in order to influence the government and other institutions to consider their demands. Community

[15] Social movements, including NGOs, are increasingly more relevant in the contemporary political life, crossing national borders, and challenging relations of power, as for example the Greenpeace (environmentalist international NGO), the Zapatista movement (social movement in the region of Chiapas, Mexico), and Falun Gong (Chinese religious and social movement) (see more about this issue on Croucher, 2004: 12, 18; Dahlgren, 1991; 2000: 315; and Castells, 2001: 138-139, 144, 164).

members daily send and receive messages about the theme of environmental education, from news about techniques and events to further debates on pedagogical issues related to the field. Many of these messages focus on how the government is tackling the related issues: projects, funding opportunities, federal policies, international agreements, annual budget etc. Occasionally the communities mobilize themselves to oppose or support the government in local and federal levels. Using the Internet as their main communication channel, members inform their political position to governmental offices. Some times this communication is individual: each member send her or his own email to the specific office, thus the collective movement is obtained by the sum of the individual manifestations. Other times the community leadership sends emails or formal letters in the name of the community as a whole.

The studied communities related, for instance, two important cases in which their collective mobilization had political impact. In one occasion, the communities have opposed the distribution of pedagogical material which has been funded by resources of a corporation which produces transgenic food. They have understood that the content of such a publication has been distorted to favour transgenic food, which is opposed by the studied communities. In other occasion, even more drastic, the federal government has decided to extinguish the office responsible for environmental education. The collective mobilization of many environmental-education Internet-mediated communities have convinced the federal government to review the cited extinction. The communities also may support the government, and indeed it happens, as the main discussion in this thesis will explore.

The identity of the studied communities is intrinsically ambiguous, as they are informal social movements and have members from NGOs, universities, educational institutions and other private organizations, as well as from the government. Thus the collective political manifestations not necessarily represent the individual members' interests. Specially in situations of opposition or support of the government, members assume diverse positions, that not necessarily are represented in the so called collective decision.

1.4.3. Research approach

This research follows an interpretive orientation (to be presented in chapter 4), and new institutionalism, at a theoretical level (to be discussed in chapter 3), to investigate how hierarchical institutions influence social structures that are related to decision-making processes in the four selected communities. This thesis starts from the empirical observation, obtained from the pilot study, that these communities have segregated social structures related to their decision-making processes (an instance of centralization, following the hierarchical model described by Simon, 1997 [1945]), in spite of declaring their aim of constructing network-like structures. More specifically, this work adopts Scott's (2001) framework on institutional carriers to understand in more detail how institutions influence the emergence of segregated decision-making processes in these Internet-mediated communities, as the observed dynamic resembles the diffusion of institutional features (DiMaggio and Powell, 1991b [1983]).

Further, this research draws upon work that has pointed out the relevance of considering institutional influences on virtual communities (DiMaggio *et al.*, 2001; Venkatesh, 2003; Matzat, 2004; and Souza *et al.*, 2004), and upon Wellman's (2004: 127) request for theory-driven research on Internet phenomena. As, to date, researchers have adopted mainly descriptive and exploratory approaches, it becomes increasingly necessary to use specific theoretical lenses to produce theoretically sound insights and frameworks. This thesis, thus, adopts a theory-driven approach, following new institutionalism to frame its question, to guide the data collection and to analyse the resulting data. This investigation empirically explores the idea that institutional carriers influence the decision-making processes in Internet-mediated communities.

In addition, drawing upon Gregor (2006: 613, 618-619), this research adopts new institutionalism as a theoretical lens which helps to explain how things happen in the studied phenomenon, without aiming to test the theory. Following Gregor (ibid: 618-619, 623-624), the aim of this explanation is not to point out a scientific law-like generalization that governs a phenomenon, through for instance statistical association.

The objective is, rather, to discuss a causality that is related to broader mechanisms, in order to improve the understanding of the phenomenon: to show a certain way of analysing the world (ibid). For Gregor (ibid: 624), case-study research design is particularly useful to develop this kind of explanatory theoretical approach, which is the methodology adopted by this research (as presented in section 4.2).

1.4.4. Research question

Based on this background, this research has a broad interest in exploring how institutionalised hierarchical structures influence the decision-making processes of Internet-mediated communities. More specifically, this research proposes to answer the following question:

> *How do institutional carriers influence the establishment of governance structures in Internet-mediated communities that lead to segregated decision-making processes (an instance of centralization) that contrast with the official rhetoric of the communities for non-hierarchical, network-like modes of operating?*

1.4.5. Outline of contributions and limitations

The arguments on the contributions and limitations of this research are detailed in chapter 8 (concluding discussion). In this introduction, nonetheless, it is worthwhile to briefly describe the contribution this thesis makes and also some of its limitations.

First, this investigation intends to fill a gap in the academic literature on virtual communities. As discussed in chapter 2, there is a general lacuna in the scholarly literature on how institutionalised structures influence virtual communities. This hiatus is even more acute in relation to the influence of institutionalised structures on community governance structures, and decision-making processes. This research directly contributes to reducing this gap.

Second, in terms of limitations, I am aware that, in choosing one theoretical lens (new institutionalism), there are other possible interpretations that will not be developed here. As well summarized by Walsham (1993: 7): "Theory is both a way of seeing and a way of not-seeing. A particular theoretical perspective blinds us to other perspectives at its moment of application". Thus theory-driven research on the one hand has the advantage of guiding the data collection, helping to distinguish relevant observations from irrelevant ones (Walsham, 1995: 76; King, Keohane and Verba, 1994: 29), but on the other hand it implies the risk of being more restricted in terms of the possible interpretations of the social phenomena (Walsham, 1993: 7; Vaughan, 1995 [1992]: 195).

Based on empirical and theoretical evidence, this study approaches Internet-mediated communities in order to understand the institutional influence on their decision-making processes. One can argue that this focus somehow glosses the newness of these social collectivities, as this research is clearly concerned with studying how these Internet-mediated communities resembles institutionalised, hierarchical structures and not how they differ. It is thus necessary to make some clarifications on this argument.

This work does not deny that virtual communities have the potential to create network-like governance structures, and indeed many scholars have discussed this possibility (Castells, 2000 [1996]; Delanty, 2003; Steinmueller, 2002; Graham, 1999; Juris, 2005; Pickard, 2006). This research, nonetheless, is concerned not with the newness of governance structures of the four studied Internet-mediated communities, but with the similarity (isomorphism) of their decision-making processes with long-standing institutionalised, hierarchical ones. Indeed, the simple fact that this domain is being investigated implies that it could be otherwise, that the decision-making processes might not have been influenced by hierarchical structures. But in practice, at least the pilot study demonstrates that these Internet-mediated communities have been influenced.

Certainly, other research may follow a different path and demonstrate the newness of these social collectivities, but still the presence of new behaviour patterns, which do not

resembles centralized ones, does not constitute evidence against the presence of behaviour patterns that resembles old ones. This study thus recognizes its limitations, of focusing on one side of the phenomena, namely the institutional influence. It restates, nonetheless, that it is possible to investigate the converse phenomena: that governance structures that do not only resemble institutionalised ones. Furthermore it argues that its concern with institutional influences is valid per se, as the phenomena in question permit this approach, as demonstrated by the pilot study.

1.5. Outline of next chapters

This research develops as follows. Chapter 2 reviews the literature on virtual communities, indicating the main issues debated in this domain. This chapter describes the controversy in terms of the adequacy of using the term community for referring to computer-mediated interactions; the need to define community boundaries in this specific domain; and the main themes that scholars have discussed in relation to virtual communities. Finally, this chapter argues that there is a gap in the academic literature on how institutions influence the governance structures of virtual communities.

Chapter 3 presents this research's theoretical framework, new institutionalism. The chapter develops a perspective which explains how institutions and the process of institutionalisation are understood in this thesis. The chapter then outlines a specific framework on how institutional carriers explain the institutionalisation of social structures, drawing mainly upon Scott (2001).

Chapter 4 introduces this research's conceptual framework, design and data collection methods. The conceptual framework follows an interpretive orientation, to understand how institutions influence behaviour pattern, highlighting also the relevance of social context in the study of social phenomena. The chapter discusses the reasons for designing a multiple case-study research, and the methods used to obtain data, mainly a qualitative approach of in-depth, semi-structured interviews. The chapter concludes with a discussion of the processes of choosing the empirical objects, transcribing the interviews,

coding and translating, as well as the procedures adopted to ensure the quality of this research.

Chapters 5, 6 and 7 present findings and analyses of this thesis. Chapter 5 focuses on mapping the institutional carriers which influence the studied communities in the reproduction of segregated decision-making processes. Chapter 6 introduces the role of agency in the reproduction of this institutionalised social structure within virtual environments, through two constructs: *arguments* (which are justifications for adopted behaviour) and *tactics* (which are the actual practice associated with the reproduction of social structures in the situation). And chapter 7 compares the four cases studied in this thesis, exploring both their similarities and contrasts, and related contexts.

Finally, chapter 8 consolidates and discusses the findings and analysis of this thesis. It answers the research question in a systematic fashion, explaining the role of institutional carriers in the diffusion of social structures through the studied communities. It also presents the contributions of this thesis, suggesting that Scott's (2001) framework on institutional carriers may be improved through adding new elements (arguments and tactics), which emphasise the role of agency in the process of institutionalisation. Furthermore, the chapter points out the limitations of this investigation and suggests future researches in the field.

2. Literature review: The debate on virtual communities

Computer-mediated interactions, especially through the Internet, have permitted the emergence of new forms of voluntary collectivities. These formations have usually been called: virtual, online communities; or virtual, online social networks; or community networks. This chapter presents a review of the literature concerning these new collectivities, here called generically, as described in chapter 1, *virtual communities*, with the objective of mapping the academic research in this domain, as well as of identifying how this thesis can contribute to scholarly work.

Reviewing this literature, published between January 1993 and March 2006, it becomes clear that scholars have strong disagreements about the best term to use when referring to these new electronic collectivities. The main disagreement is between those who prefer the term *community*, and those who defend the concept of *social network*. The first section below discusses this theme, as well as the arguments for using the term community in this thesis.

The debate among authors, nonetheless, goes further: some argue that a virtual collectivity is a community as long as it has clear boundaries, and others use the term community in a very loose way, to refer to any computer-mediated group. The second section summarizes this discussion and presents Graham's (1999) proposal that a virtual community should have clear boundaries, a criterion that is followed by this thesis in the definition of its empirical object (subsection 1.4.2).

Next, this chapter presents the main themes that have been researched by scholars in the domain of virtual communities. This third section does not aim to be an exhaustive classification, but to picture the main research focuses. In a nutshell, the academic work has made six major propositions in relation to virtual communities:

(i) these collectivities have functioned as channels for exchanging information and emotional support;
(ii) they may enable or constrain the formation of social capital;
(iii) they may help local communities to support themselves through computer-mediated interactions;
(iv) they may foster the construction of identities and sense of belonging among dispersed people;
(v) they struggle for long term sustainability; and
(vi) they have rules and norms of governance and behaviour.

In the light of the main theme of this thesis, this literature review thus narrows down its focus to exploring how scholars have studied the influence of institutions in virtual communities. Although some scholars recognize the relevance of such studies, few researches analyse the phenomenon in depth. Due to this gap in the academic literature, the fourth section develops the claim that this research may contribute to this scholarly domain.

Finally, the last section presents the methodology of this literature review and its limits.

2.1. Community versus social network

The conceptualization of computer-mediated collectivities has received impressive attention from scholars. The main disagreement is whether to call these groups *communities* or *social networks*. When computer-mediated communication started to appear, Licklider and Taylor (1968: 38) proposed calling these emergent collectivities *online interactive communities*, meaning geographically dispersed groups, which share common interests rather than location, linked through electronic interactions.

The term *virtual community* was popularised by Rheingold (2000 [1993]), in the first edition of a book that analysed the personal interactions on a Usenet – User Network – group (WELL - Whole Earth 'Lectronic Link), between 1985 and 1993. For Rheingold,

"[v]irtual communities are social aggregations that emerge from the Net when enough people carry on those public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace" (ibid: *XX*). Following Rheingold, many scholars adopt the term virtual community (Mansell and Steinmueller, 2000: 84; Steinmueller, 2002: 21; Castells, 1996: 362; 2001: 125; van Dijk, 1999: 159). Others have preferred similar alternatives, such as: *virtual communities of interest* (Gómez, 1998); *knowledge communities* (Barrett *et al.*, 2004); *cybercommunities* (Fernback, 1999: 211; Delanty, 2003: 168); *computer-mediated communities* (Etzioni and Etzioni, 1999); and *Internet-mediated communities* (Bellini and Vargas, 2003).

In spite of being widely spread, some scholars have questioned the adequacy of using the term community for electronic interaction. The main argument here is that this concept is traditionally related to ideas of kinship and geographical proximity[1], by analogy with pre-industrial societies in which these dimensions defined local, small, rural communities (Slevin, 2000: 92-98; Mitra, 1997: 56-59; Watson, 1997: 103; Barab, 2003: 198).

Naturally, this argument is strongly questioned by authors who oppose the idea that community must be synonymous with neighbourhood or locality, especially in contemporary societies. They claim that people, especially from the 1960s onwards, keep strong and weak relationships through many communication media (from letters, to the telephone, to the Internet), as well as through transport means (cars, trains and airplanes), independent of geographical boundaries and physical presence (Rheingold, 2000 [1993]: 359; Wellman, 1997: 185; Mitra, 1997: 56-57; Castells, 2001: 125; Anderson, 1999: 457). Indeed, the criterion of neighbourhood does not explain religious, cultural, ethnic or gay communities (Etzioni and Etzioni, 1999: 241-242), as well as open-source software communities (Barrett *et al.*, 2004: 4-7; Steinmueller, 2002: 33, 51). There are also

[1] Falk (1997: 289), and Kling and Courtright (2003: 224) explain that the traditional concept of community derive from the work of the sociologist Ferdinand Tönnies, who links these "village-style" collectivities (*Gemeinschaft*) with locality, closed ties and shared values, in opposition to the idea of "city-style" collectivities (*Gesellschaft*) (society), which are characterized by dispersed social ties and dissimilar interests. See Tönnies (1955) for further details.

arguments that ICTs provide a socially constructed space of communication, independently of physical presence (Jones, 1995: 16-17; Carter, 2005: 148; Bellini and Vargas, 2003: 4; Wachter, Gupta and Quaddus, 2000: 477), which Rheingold (2000 [1993]: *XVII*) calls *conceptual space.*

Moreover, these authors comment that people have similar experience and interpret in similar way their social interactions through online and offline communication channels. In both environments they cultivate a sense of belonging and attachment, and they do similar things such as debating and exchanging information and emotional support (Jones, 1998: 4-5; Delanty, 2003: 168; Rheingold, 2000 [1993]: *XVII;* Cohen, 2000 [1985]: 15, 98). Thus it would not be necessary to call them differently only because the communication channel is diverse.

Compared to community, the concept *social network* has the advantage of being comprehensive, applying to any group of people, organization and social entity connected by social relations through any communication channel (from face-to-face meetings to computer-mediated interactions) (Wellman, 1997: 180; Garton *et al.*, 1999: 75, 88). The concept, however, has shortcomings. Firstly, social networks do not have clear boundaries, such as criteria of membership, forcing researchers to define such limits arbitrarily (Crow, 2004: 9). Secondly, social networks do not have governance structures (Wijk *et al.*, 2003: 429), unlike many online collectivities. The concept thus is better related to loosely defined relationships, rather than more structured interactions.

Many scholars have defended the re-conceptualisation of the term community in order to integrate the developments in transport and communication technologies, emphasising issues of social relations and interactions, identity and shared interests, rather than locality, bounded neighbourhood and face-to-face communication (Warschauer, 2003: 319; Barab, 2003: 198; Haythornthwaite and Wellman, 2002: 32-34; Castells, 2001: 125-127; Preece, 2001: 347-349; Graham, 1999: 132-134; Anderson, 1999: 457-462; Jones, 1998: 4-12, 1995: 11-20; Howard, 1997: 83; Porter, 1996: 13; Komito, 1998: 99).

Some scholars follow Anderson's proposition (2003 [1983]: 6) that "all communities larger than primordial villages of face-to-face contact (and perhaps even these) are imagined", since modernity has introduced communities, such as nation states, that cannot be sustained through personal contact (Bakardjieva, 2003: 293; Fernback, 1999: 213; Komito, 1998: 99; Slevin, 2000: 93; Delanty, 2003: 170; Mitra, 1997: 55). Indeed, Watson (1997: 120) proposes that the focus on imagination permits us to judge communities from the viewpoint of participants, rather than detached observers.

We can conclude that community is not synonymous with locality, especially in contemporary societies, in which people are able to maintain dispersed social ties through communication and transport technologies. This further allows us to draw upon work that emphasises the view of communities as sense of belonging and emotional attachment, and to employ Anderson's proposition that communities are imagined.

2.2. The boundaries of virtual communities

Reviewing the conceptualization of the term virtual community itself, scholars have complained that it lacks a clear definition. The main problem is that it is used indiscriminately, meaning anything from groups of people who do not live geographically close, but share common interests, to community networks that are bounded to specific neighbourhoods (Graham, 1999: 131; Preece, 2001: 347; DiMaggio *et al.* 2001: 317; Komito, 1998: 97; Kling and Courtright, 2003: 221).

On the one hand, some scholars adopt a very loose concept of virtual community. Mansell and Steinmueller (2000: 84), for instance, use this concept in a broad sense, not only as a network of friends, as suggested by Rheingold (2000 [1993]), but also as "the entire gamut of social interchange that may arise from interpersonal interactions in electronic commerce, in education, and in scientific research". Later, Steinmueller (2002: 21, 28) reaffirms that there is a virtual community when its members interact through computer-mediated communication voluntarily. Castells (1996: 362) has a broad

definition: a virtual community is "a self-defined electronic network of interactive communication organized around a shared interest or purpose".

On the other hand, other scholars favour a restrict definition that provides a *boundary* between membership of virtual communities and non-members. Discussing communities in general terms, Cohen (2000 [1985]: 12) states that it is necessary to understand community boundaries, in order to clarify what the members of a group have in common (their identity), and how they are distinguishable from other groups. The author emphasises the symbolic aspect of these boundaries, the meaning people give to them through social interactions, while remembering that different members have different perception of the location of these same boundaries (ibid: 12-13). Similarly, Kling and Courtright (2003: 221) recommend investigating the empirical interactions in order to understand whether collectivities are communal.

In considering how to define such boundaries, Graham (1999) relates the concept of community to "a body of individuals who are [*voluntarily*] bound together [...] by the contingent fact of having *interests in common*" (ibid: 132, [142]), who accept adhering to rules[2] that determine "both what their objective interests *are* and what their subjective interests *ought to be*" (ibid: 133). If it fulfils these conditions (*common interests*, *rules* and *voluntary membership*), an online group has boundaries and can be called a virtual community, states Graham (1999: 142).

It would appear that, implicitly, many scholars take into consideration the parameters suggested by Graham when determining community boundaries. To start with, authors emphasise that people develop virtual ties when they share *common interests*, from finding a job to obtaining emotional support, which create a symbolic boundary for the community, giving meaning to their social interaction (Bellini and Vargas, 2003: 4; DiMaggio *et al.*, 2001: 317; Fernback, 1999: 204; Komito, 1998: 99; Watson, 1997: 103; Falk, 1997: 289; Baker and Ward, 2002: 207; Wellman, 2001: 39; Rheingold, 2000

[2] Graham (1999: 142) gives examples of rules for admission and exclusion, and norms of behaviour.

[1993]: 360; Burnett and Bonnici, 2003: 333; Ridings, Gefen and Arinze, 2002: 273; Gómez, 1998: 226; Millen and Dray, 2000: 166; van Dijk, 1999: 160).

The relevance of *rules* to defining community boundaries is also frequently cited. For example, those that define forms of participation (including barriers to entry), appropriate behaviour, moderation and punishment (including the process of ostracizing those who do not respect the rules) (Pankoke-Babatz and Jeffrey, 2002: 221; Bellini and Vargas, 2003; 6-7; Teo *et al.*, 2003: 674; Kelemen and Smith, 2001: 384; Fernback, 1999: 211). Burnett and Bonnici (2003: 349), and De Cindio *et al.* (2003: 395, 404) argue that social norms are the glue for the cohesiveness of virtual communities, as they help to define identity and boundaries.

The aspect of *voluntary* participation is less discussed in the academic literature, although some authors highlight this aspect as being a mark of an effective community (Wellman *et al.*, 1996: 221; Jones, 1995: 11; Bellini and Vargas, 2003: 7; Steinmueller, 2002: 21, 28). For example, Steinmueller (2002: 27) argues that social grouping for reason of employment would not be considered an online community; and Castells (2001: 125) relates the idea of virtual communities to communities of choice.

We would agree with DiMaggio *et al.* (2001: 317) that researchers should distinguish between different types of virtual communities, avoiding using the same term to refer to very different social interactions. This research thus follows Graham's (1999) definition of community boundaries, based on the parameters of common interests, rules and voluntary participation, to state that the empirical objects of this study are indeed virtual communities (as explained in chapter 1).

2.3. The main research topics

This section presents the six main focuses of the academic literature on virtual communities:

(i) Virtual communities channel information and emotional support
(ii) Virtual communities affect the formation of social capital
(iii) Virtual communities support neighbourhoods
(iv) Virtual communities foster the construction of social identity
(v) Virtual communities struggle for long term sustainability
(vi) Virtual communities have rules of governance and behaviour

As researchers generally develop multiple approaches, works are often cited in more than one theme. The objective of this section thus is not to classify each piece of research, but to map the main research topics. Less relevant approaches have been excluded from the list.

2.3.1. Virtual communities channel information and emotional support

Some scholars relate the development of virtual communities to the interests that motivate online interactions. The sharing of information and knowledge is certainly one of the most important motivations for belonging to virtual communities (Butler, 2001: 347; Preece, 2001: 347-348; Faraj and Wasko, 2001: 6-7; Mansell and Steinmueller, 2000: 84-88; Jones, 1998: 4-5; 1995: 19; Wellman *et al.*, 1996: 213, 219; Wachter, Gupta and Quaddus, 2000: 477-478). Some authors argue that these reasons are greatly significant because online interactions are fast and inexpensive (Gómez, 1998: 226), and e-mails are accessible and efficient (Okunoye and Karsten, 2003: 353).

Furthermore, researchers associate online interaction with social and emotional support (Castells, 2001: 127; Butler, 2001: 347; Preece, 2001: 347-349; Rheingold, 2000 [1993]: *XX*; Garton *et al.*, 1999: 75-78; Wellman *et al.*, 1996: 220; Nip, 2004: 414; Katz and Rice, 2002: 133; Komito, 1998: 98). They point out that people are motivated to collaborate with virtual communities because they expect some benefits from these collectivities, such as a better public reputation (Kollock, 1999: 235; Matzat, 2004: 208-

222), future help (Faraj and Wasko, 2001: 10; Millen and Dray, 2000: 166), or a more efficient political organization (Wellman, 1997: 180; Butler, 2001: 347).

2.3.2. Virtual communities affect the formation of social capital

The research on virtual communities often discusses how computer-mediated interactions affect the formation of social capital. Coleman (1990: 304-305) explains that social capital is embodied in the relations among people, in such a way that actors may use these relations as resources for seeking their interests – for instance, to find valuable information. Merwe, Pitt and Berthon (2004: 13) define social capital as resources that are available to members within a social network. Authors who focus on social capital also emphasise the relevance of trusting the reciprocity of relations through computer-mediated interactions, as a factor that fosters exchanges and collaboration (Kling and Courtright, 2003: 227; Ridings, Gefen and Arinze, 2002: 271; Komito, 1998: 97).

As communication is fundamental to enhance social connections, the first idea is that the Internet necessarily favours community (Putnam, 2000: 171). However, researchers are divided about the effects of online interactions on social capital formation. Some authors are optimistic that communication and information networks contribute to strengthen social and emotional, weak and strong social connections, as it reduces the obstacles and costs to find groups that share common interests and information (Katz and Rice, 2002: 83, 325-350; Kavanaugh and Patterson, 2002: 339; Castells, 2001: 125-130; Wellman *et al.*, 1996: 221; Ester and Vinken, 2003: 672; Rheingold, 2000 [1993]: 364; Preece, 2001: 348; Haythornthwaite, 2005: 125). Others are cautious, stating that empirical research demonstrates that online interactions can either isolate people from both their offline environment and their social networks, or improve their involvement (Nip, 2004: 410-411; Norris, 2004: 40; Falk, 1997: 289).

2.3.3. Virtual communities support neighbourhoods

Many scholars concentrate their research on what are known as community networks, which are online communication networks used to reinvigorate geographically based communities (such as Netville, in Toronto, and Blacksburg Electronic Village, linked to a university town in Virginia, USA) through sharing information and communication (Carroll and Rosson, 2003: 384; Venkatesh, 2003: 339; Hampton and Wellman, 2001; Kavanaugh and Patterson, 2002: 325-327). In these cases, members of the virtual community often are the same people that share the locality.

Authors in this field study both how the local communities influence the virtual social structures, and how these restricted computer-mediated networks affect face-to-face social relations[3], within and outside the local community, some local networks permitting members communication beyond the community boundaries (Venkatesh, 2003: 344-345; Carroll and Rosson, 2003: 384; Hampton and Wellman, 2001: 476; 2002: 345; Lutters and Ackerman, 2003: 157). These researchers emphasise that community networks improve communication channels, and foster members more active participation in the solution of their local problems.

2.3.4. Virtual communities foster the construction of social identity

Studies on virtual communities often highlight how virtual interactions are related to the way people construct their beliefs, values, meanings and affinities, in sum, their identity (Delanty, 2003: 168; Castells, 2001: 126; Etzioni and Etzioni, 1999: 241; Baym, 1995:

[3] Further to studies on community networks, that by definition consider relations between online networks and respective neighbourhoods, this literature review observes that few studies focus on how virtual arrangements are related to offline collectivities. Exceptions in this review are the studies of Gómez (1998), on how Internet-mediated interactions have affected relationships between non-governmental organizations, and Nip (2004), on how a virtual community is related to an offline activist group. Indeed, Nip (2004: 409) also undertakes a literature review on the study of virtual communities and concludes that many scholars suggest the need to understand the interrelation between online and offline collectivities, but that very few studies fill this gap. This review confirms that this gap persists.

161; De Cindio, Gentile and Redolfi, 2003: 396). Wellman *et al.* (1996: 223), for instance, explicate that providing support and information increases individuals' self-esteem and social status. Other authors emphasise that people can renegotiate their identities in online environments with greater malleability (Jones, 1998: 9; Baym, 1995: 152-154; Kelemen and Smith, 2001: 374).

The formation and maintenance of identity is particularly discussed in articles that focus on diasporic and dispersed communities (Mitra, 1997; Parham, 2004). Moreover, research stresses that virtual communities provide and/or reinforce the sense of belonging to collectivities (Teo *et al.*, 2003: 680, 692; Wellman, 2001: 18, 40; Gómez, 1998: 226; Wellman *et al.*, 1996; 220; Nip, 2004: 413; Roberts, 1998: 360; Jones, 1998; 3), especially when people attribute meaning and commitment to their computer-mediated groups (Fernback, 1999: 211; Mitra, 1997: 58; Pankoke-Babatz and Jeffrey, 2002: 219).

2.3.5. Virtual communities struggle for long term sustainability

Some authors discuss how virtual communities may survive in the long term as collectivities (Koh and Kim, 2004: 157; Barab, MaKinster and Scheckler, 2003: 239; Preece, 2001: 347; Hopkins, 2005: 379; Steinmueller, 2002: 29; Ridings, Gefen and Arinze, 2002: 271-273; Rheingold (2000 [1993]: *XX*). As Jones (1997: 30) clarifies, the Internet permits people to express themselves, but it does not mean that others are listening, or that their words make a difference. Thus the sustainability of virtual communities in the long term depends on other criteria than providing channels for the mere expression of opinions.

Indeed, scholars relate the sustainability of a community to its capacity for helping members with information and resources; and avoiding provoking information overload and excess of social interaction (Wachter, Gupta and Quaddus, 2000: 477-478; Butler, 2001: 346; Teo *et al.*, 2003: 674). Members invest more in communities when they feel satisfaction with the level of cohesion, effectiveness and help (Roberts, 1998: 361, 367). In other words, members participate more when they believe there is a balance between

the investment of personal resources and the potential to receive similar or greater support from the communities over the lifetime of these groups (Falk, 1997: 289).

2.3.6. Virtual communities have rules of governance and behaviour

Many studies on virtual communities focus on their rules and norms of behaviour and governance. As discussed in section 2.2, some authors highlight how rules and norms are related to community boundaries and social structures (Graham, 1999: 133-134; Fernback, 1999: 211; Burnett and Bonnici, 2003: 334; Bellini and Vargas, 2003: 6). Others investigate norms of online behaviour (netiquette), which define desired and disruptive behaviours and sanction mechanisms, such as censorship or exclusion (De Cindio *et al.*, 2003: 396; Steinmueller, 2002: 24-25; Preece, 2001: 347-349; Faraj and Wasko, 2001: 17-18; Baym, 1995: 159; Bakardjieva and Feenberg, 2002: 183; Pankoke-Babatz and Jeffrey, 2002: 219; Bellini and Vargas, 2003: 7-8; Mansell and Steinmueller, 2000).

Some authors discuss why communities demand and create rules, as well as the benefits of having rules, such as fostering cooperation and trust; improving relational capital, community sociability and sustainability; and adapting to external events (Pankoke-Babatz and Jeffrey, 2002: 220-225; Matzat, 2004: 207; Faraj and Wasko, 2001: 17-18; Preece, 2001: 347-349; Komito, 1998: 105; Wachter, Gupta and Quaddus, 2000: 485-486; Bellini and Vargas, 2003: 6). Studies on open-source software communities, for instance, relate their efficacy in the coordination of projects to the presence of governance rules and norms, which embed a certain level of hierarchical decision-making processes, and assure quality in return for reputation (Lanzara and Morner, 2003: 1-4; Raymond, 2001: 49-86, 101-104; Bergquist and Ljungberg, 2001: 310, 318).

Few authors point out that rules in virtual communities are related to institutions, a theme that is further discussed below in section 2.4.

2.4. The influence of institutions in virtual communities

As described in the first chapter, this research is especially concerned with how institutions influence the governance structures of virtual communities. In this literature review, two conclusions emerge about this issue. Firstly, some scholars point out the relevance of studying the theme, but the institutional influence still emerges as a secondary theme in their research, rather than the main interest. Secondly, few researchers focus effectively on this subject, with the exception, in this review, of Matzat (2004) and Souza *et al.* (2004). These claims are clarified in the first two subsections below. The third subsection presents some concluding remarks about how this research may contribute to reduce the identified gap in the scholarly literature.

2.4.1. Institutional influence as a secondary theme

A good example of research that has institutional influence as a secondary theme is provided by Hauben and Hauben (1997). Studying Usenet groups, the authors (1997: 179-186) conclude that the libertarian goals of these communities, such as promoting cooperative and democratic culture, have become an obstacle to receiving support for hosting their discussion forums from commercial, government and university sites, as, occasionally, the contents of these discussions could jeopardize these institutionalised host organizations. Indeed, members of these communities have questioned whether it would not be more efficacious to censor their discussion contents, giving up their libertarian goals, in order to receive institutional support.

In the same direction, Venkatesh (2003: 344) recognizes that some community networks are more closely embedded in powerful institutions, which are able to impose rules and sanctions in order to enforce required behaviour amongst community members. For instance, some community networks permit interactions only between users and institutional representatives. In other words, in prohibiting direct member-to-member contact, these communities allow institutionalised interests to appropriate the network (ibid). Venkatesh concludes that horizontal networks (in which members can interact

freely with each other) are less likely of being strongly institutionalised (ibid: 345). The author finally suggests studying at which level institutionalised community networks are open to changes, and the degree of freedom members have to oppose institutionalised rules (ibid: 344).

Also De Cindio, Gentile and Redolfi (2003: 399), studying a community network in Milan (Italy), conclude that the collectivity has transferred institutionalised social rules from government, associations, political parties and schools to the computer-mediated environment. For instance, the studied community prohibits anonymity in online interactions, in order to make members accountable for their acts and opinions (ibid: 398-400). Furthermore, their discussion lists are moderated, and members are prohibited from distributing illegal information online, exchanging software, and using obscene or insulting language (ibid). Strover, Chapman and Waters (2004: 465, 482-483), studying community networks in Texas, argue that these collectivities have greater chances of being successful when local institutions and the related local community are engaged in promoting online interactions.

In a study about time and fragmented identities through the Internet, Holtgrewe (2004: 133) cites a few examples on how institutions influence open-source software communities. For instance, the open source movement maintains strong similarities to institutionalised concepts of public goods and open circulation of academic knowledge (ibid: 134). Its governance rules embed institutional norms of efficiency in the use of technical and human resources, such as: avoiding overload information and waste of time; keeping the modularity of projects; and elaborating clear guidelines for coding and controlling software versions (ibid: 133, 142). In addition, argues the author, the very possibility of open-source projects depends on institutional and social support, as companies, governments and individuals donate time and resources for the open source movement (ibid: 142).

In a more generic fashion, Gattiker (2001: 16-17, 27) and Ester and Vinken (2003: 668, 673) recognize that institutional actors (such as governments, churches and political

parties) influence online interactions. For them, institutions are permanently competing for influence over the emerging rules and norms of virtual communities, as their interests diverge from those of the new collectivities. In some circumstances, this influence is quite strong, such as the restrictions the Chinese government imposes on specific Internet contents (Gattiker, 2001: 21). In other cases, it is subtler, such as the influence of institutionalised discursive practices in online communication, which are important to maintain group unity (Howard, 1997: 148, 165). Finally, other authors comment very much in passing upon the theme of institutional influence in virtual communities (Kelemen and Smith, 2001: 382; Bakardjieva, 2003: 294; Baym, 1995: 141).

2.4.2. Institutional influence as a primary theme

In this review, only two examples focus on understanding the influence of institutions in virtual communities. Matzat (2004) concludes that institutions influence the emergence of help-prescribing norms in online research communities. And Souza *et al.* (2004) discuss how groupware tools institutionalise the governance mechanisms of virtual communities, independently of the kind of social structures the related informal face-to-face groups wish to establish. These studies are described in some detail below.

Matzat (2004: 206, 224) concludes that the outcomes of virtual research communities are deeply related to the institutional conditions of these groups, in such a way that, through institutional forces, the offline relations effect the online governance structures. Matzat (2004: 205, 224) suggests that the level of embedment of a community in the respective offline social networks is associated with the creation of a strong help-prescribing norm, favouring an environment in which members try to answer the questions effectively through public online discussions, thus developing expectations of cooperative behaviour.

The author argues that the greater the social embedment of an online group, the higher its network density, thus fostering the development of a strong norm of helping each other, because researchers have the aim of constructing a reputation which may improve their status in the community (ibid). Matzat further suggests that the study of governance

structures of online groups may help to understand how institutional influence occurs. The author conducted a survey to test hypotheses based on Coleman's model (1990), which states that norms emerge within a group when their ties are sufficiently dense, and Becker's reputation model (1976), which argues that researchers want to maximize their status (Matzat, 2004: 207-209).

In the second study, Souza *et al.* (2004) indicate that technology influences the process of institutionalisation of virtual communities. The authors observe that the inscribed rules in groupware tools (such as Yahoo! Groups, SmartGroups and MSN Groups) foster informal academic discussion groups to adopt explicit structuring procedures (ibid: 635). The authors explain that software encodes norms and rules, conducting to a process of compulsory institutionalisation, as these rules and norms influence behaviour in spite of these groups having different aspirations in terms of how their online interactions should be conducted (ibid: 636).

For instance, in groupware systems, the group must be initiated by one person, who thus gains automatically the status of owner of the group and leader in relation to other members, roles which afford special powers to extinguish the group, and to define rules of affiliation and moderation (ibid: 637, 650). Thus the software, in spite of having some level of flexibility[4], imposes some coercive patterns that contradict the rules and norms of informal groups that aim at egalitarian membership, forcing virtual communities to conform to its requirements, argue the authors (ibid: 637, 647). The study is based on contrasting members' expectations about possible uses of groupware tools to how the groupware tools operate in practice and explores the differences between expectations and practice and the effects of these differences.

[4] Indeed, these especial rights can be given to some or all of the other members in the group, thus the tool permits the cited kind of use, as well as enables other forms of appropriation. In this thesis, I differentiate clearly between the technical features which are embedded in Internet tools, how communities customize these same tools, and how communities appropriate in practice these tools. Thus this thesis does not agree that Internet tools institutionalise the communities compulsorily, as argued by Souza *et al.* (2004). See further discussion about these differentiations in subsection 5.2.10.

2.4.3. This dissertation's contribution to the literature

Drawing upon this literature review, one can concludes that there is a gap in the present scholarly work in relation to how institutions influence virtual communities, as was pointed out by DiMaggio *et al.* (2001: 329). In this review, as presented, few papers discuss the theme and, for the most part, they only explore the institutional aspect as a secondary focus, with the exception, already noted, of Matzat (2004) and Souza *et al.* (2004).

Furthermore, few researchers focus explicitly on institutional influence in governance structures of virtual communities. Venkatesh (2003) states that institutions influence community network governance, for instance disallowing direct communication between members. Thus in restricting the access to institutional representatives, the structures become more vertical (centralized) than horizontal. Holtgrewe (2004) relates institutions to governance rules of open-source software communities. And Souza *et al.* (2004) investigate governance structures that are embedded in groupware tools.

Other articles in this review are concerned with the setup of rules in general, but they do not discuss governance structures (Gattiker, 2001; Ester and Vinken, 2003; Matzat, 2004). Hauben and Hauben (1997) and De Cindio, Gentile and Redolfi (2003) grasp the issue of governance only indirectly, discussing how institutions influence (or have the potential to influence) the kind of content that is shared in virtual communities.

Finally, none of the reviewed researches either discusses the influence of institutions on the decision-making processes of virtual communities, or adopts a theoretical framework on new institutionalism, and the role of institutional carriers, to explain this process of institutionalisation, as proposed here.

This research thus aims to contribute to the scholarly literature through reducing the lacunae in studies of how institutions influence the governance structures of virtual

communities. More specifically, this research proposes to investigate how institutional carriers influence the decision-making processes of a group of Internet-mediated communities, a theme that has not been studied in the published literature, thus demonstrating the need for and significance of an original scholarly contribution on this issue.

2.5. Methodology and limits of the present literature review

The selection of works for this review of the literature on virtual communities has been done through both electronic and manual search in the main academic journals[5] and books, between January 1993 and March 2006. The electronic search has used combinations of keywords (virtual/online community, virtual/online social network, community network, Internet, institutionalisation, institution, institutionalism, rules, norms). Other works before 1993 have been added following the references on selected articles, when they are relevant for this thesis.

After a first reading, I have chosen articles and books that were more relevant for the objectives of this work, giving preference to more recent publications. Thus researches, especially from the same authors, have been selectively excluded where later publications expand on and refine the earlier work on similar themes, to avoid excessive repetition.

[5] The list of journals are extensive, as this research has used the search engines of ScienceDirect Elsevier Science Journals, Ingenta Connect, Swetswise, MetaPress, Business Source Premier, JSTOR, Blackwell Synergy, and Sage Publications. Among the main journals covered were: Behaviour & Information Technology; British Journal of Management; British Journal of Sociology; Computer Supported Cooperative Work; European Journal of Information Systems; Information & Management; Information and Organization; Information Society; Information Systems Journal; Information Systems Research; Information Technology & People; Information, Communication & Society; International Journal of Information Management; Journal of Information Technology; Journal of Strategic Information Systems; Media, Culture & Society; MIS Quarterly; New Media & Society; Organization; Organization Science; Organization Studies; and Social Movement Studies.

After mapping of the significant publications disclosed through this search process, and selecting main debates and themes, all chosen works have been read again, in order to verify how each one relates to these selected debates and themes. In this second reading, special attention has been given to the influence of institutions within virtual communities, in order to confirm the relevance of this thesis for the scholarly literature.

The selection of articles and books has been qualitative, starting from more recent texts: firstly gathering a relevant number of works, and then gradually discarding those that do not add new insights beyond the previous selected exemplars, following a theory-saturation strategy, as suggested by Mason (2002: 134). This procedure is coherent with the objective of mapping the main debates and themes on the domain, and investigating whether the academic studies have focused on the institutional influence on virtual communities. As this methodology favours more recent studies, the selected material is not intended to be a complete picture of the debate on virtual communities over time.

As any qualitative selection of contents, this research may have failed to explore every relevant piece of the academic literature on virtual communities. It has been successful, nonetheless, in highlighting themes and debates that are relevant in the studied domain, and to demonstrate that the influence of institutions on virtual communities has not been explored substantially, indicating the potential for a worthy scholarly contribution. The selection of works is not concerned with the theoretical and methodological approaches, although the investigation has verified at least that no published research on virtual communities has adopted a theoretical framework of new institutionalism and institutional carriers, as proposed and discussed in the previous section.

3. Theoretical framework : A new-institutionalist approach

This thesis, as explained in the first chapter, is concerned with understanding how hierarchical social structures has diffused to four Brazilian environmental-education Internet-mediated communities in such a way that they have organized segregated decision-making processes. This investigation draws upon the sociological literature of new-institutionalism to develop a theoretical lens to study this phenomenon. This chapter thus discusses the framework to understand the processes of institutionalisation: how institutions are formed and how they diffuse across settings, which is the main focus of this investigation.

A common idea behind institutionalism is that institutions strongly influence how social structures are enacted by social actors, in such a way that certain social patterns are reproduced. For old-institutionalist authors, the main channels of such an institutional influence are the rule systems and the normative controls, which regulate actors' behaviour (Scott and Meyer, 1994: 5; DiMaggio and Powell, 1991a: 15, 27; Scott, 1994a: 82). For new institutionalist authors, the process of institutionalisation is grounded mainly in cultural-cognitive models, and taken-for-granted scripts and schemas, including the creation of roles and forms of actorhood (Scott and Meyer, 1994: 5; DiMaggio and Powell, 1991a: 8, 15, 27; Scott, 2001: 37; Hasselbladh and Kallinikos, 2000: 710-712)[1].

[1] Discussing these main approaches – old and new institutionalism – Scott (2001: 64; 1994a: 98; 1994b: 61) explains that institutions involve *regulative* and *constitutive* rules (drawing upon Searle, 1995; 1969). Regulative rules influence existing activities; meanwhile constitutive rules construct the possibilities of certain activities in the sense that they cognitively create reality through defining categories and typifications. "Constitutive rules construct the social objects and events to which regulative rules are applied." (Scott, 2001: 64). New institutionalist authors focus mainly on the cultural-cognitive aspects of institutions, thus in their constitutive features. These constitutive rules are also related to construction of social roles and forms of actorhood (as discussed in subsection 3.2.1).

These claims deserve a more detailed explanation. Thus before going further in the introduction of other concepts, it is necessary to conceptualize the ideas of *social structures* and *institutions*.

Porpora (1998 [1989]) summarizes four main concepts of social structures, derived from different schools of sociology. This thesis specifically follows Giddens's (1979, 1984) conceptualization of social structures as collective rules and resources that structure behaviour and are implicated in the reproduction of social systems[2] (Giddens, 1979: 64; Giddens, 1984: 17, 25; Porpora, 1998 [1989]: 339). This definition of social structure, developed by Giddens in his structuration theory, is consistent with the institutional framework adopted by this research, as suggested by W.R. Scott (2001: 67, 75) and J. Scott (1995: 214).

Following structuration theory, social structures are understood as memory traces: knowledge about how action should be performed (Giddens, 1979: 64; Giddens, 1984: 17, 25, 377; Porpora, 1998 [1989]: 345). This definition does not imply, nonetheless, that social structures define behaviour. Giddens (1979: 70; 1984: 25, 374) claims social

[2] Giddens (1979: 65-66) defines *social systems* as "regularised relations of interdependence between individuals or groups, that typically can be best analysed as *recurrent social practices*. Social systems are systems of social interaction; as such they involve the situated activities of human subjects, and exist syntagmatically in the flow of time. Systems, in this terminology, have structures, or more accurately, have structural properties; they are not structures in themselves". J. Scott (1995: 204), explaining Giddens, says that "[s]ocial systems are seen as the actual patterns of social relations that are formed into interdependent social institutions and collectivities" (see also Giddens, 1984: 25). Giddens's definition of social systems, nonetheless, is similar to what some authors call social structures, i.e. "systems of human relationship among social positions", explains Porpora (1998 [1989]: 339). In this conception, organizations (and any social entity) are instances of social structures (see similar use in Castells, 2000: 5; and Leinhardt, 1977: xiii). Although this thesis does not refer to organizations and social entities as being social structures, it acknowledges that the term is currently used with this meaning by some of the cited authors. Thus, when citing these authors, this thesis can refer to organizations as being social structures and institutions, as these scholars have associated both concepts. In the other parts of this research, the concept of social structure has a more restricted meaning than embracing all organizations and social entities, adhering to Giddens's definition.

structures are both the medium and the product of social action (the duality of structures); actors thus constitute social structures through interaction, and they are themselves constituted by the social structures[3]. Normative structures constrain and enable behaviour, forging regularity, but behaviour is also the source of changing normative structures, thus behaviour and norms (agency and structure) shape each other (Giddens, 1979: 64-66; Scott, 1998: 17-18; Manicas, 1998: 318). In other words, societies have a level of consensus about social structures, permitting the emergence and cultivation of patterned behaviour, but this consensus is never total, thus there is always space for changes in social structures (Giddens, 1984: 14-15; Meyer, 1992: 264; Bhaskar, 1998: 218; Manicas: 1998: 320).

The understanding of social structures helps to conceptualize the idea of institutions, a concept that naturally has been defined in many different ways, as pointed out by DiMaggio and Powell (1991a: 1). After analysing the new-institutionalist literature, this thesis has chosen Scott's concept (2001: 48), understanding that the author is particularly successful in creating a simple, short definition while at the same time revealing the complexity of institutions as compounded by regulative, normative and cultural-cognitive elements:

> *"Institutions are social structures that have attained a high degree of resilience [...] [which] are composed of culture-cognitive, normative, and regulative elements, that, together with associate activities and resources, provide stability and meaning to social life."*

In this definition, Scott emphasises the very nature of institutions as constituted by regulative, normative and cultural-cognitive elements, and the need to integrate, in the same framework, these different perspectives. He argues that different theorists focus on different aspects of social structures. "Generally speaking, economists stress regulatory

[3] Giddens's conception of social structures is thus similar to what Berger and Luckmann (1967 [1966]: 70) call *social order*, as these authors argue that the social is a product of past human activity and only is instantiated as far as humans keep producing it.

factors; political scientists and early sociologists, normative factors; and recent sociologists, anthropologists, and cognitive psychologists stress cognitive-cultural factors" (Scott, 1998: 133).

Further, Scott's definition (2001) highlights the central relevance of rules, norms and cultural beliefs in institutions (as do many authors, as discussed below), but he also introduces two important ideas of "associate activities and resources", inspired by structuration theory (Giddens, 1979, 1984). In accordance with structuration theory, social structures are enacted through social interaction, and agents draw upon rules and resources to enact social structures (Giddens, 1979: 64; 1984: 17, 25). In this perspective, structures and agency are not dichotomies, but aspects of an interactive process in which agency enacts structures, and structures constrain and empower agency (Giddens, 1979: 66; 1984: 25; see Scott, 2001: 75).

The list of institutions in contemporary societies is extensive, considering its complexity. In order to give some examples, Jepperson (1991: 144) suggests a very broad list, which ranges from marriage, sexism and handshake, to the contract, wage labour, insurance, formal organizations, the army, presidency, the vacation, the academic discipline and voting. At a more abstract level, some authors also consider the process of rationalization an important institution in modern societies (Meyer and Rowan, 1977: 342-343; Scott, 1992a: 14; Scott and Meyer, 1994: 4; Hasselbladh and Kallinikos, 2000: 700).

The list of institutions, nonetheless, is not frozen. As defended by Jepperson (1991: 146), one can define whether a social object is an institution only through analyzing the context of a given phenomenon. Avgerou and Madon (2004: 175) agree with the proposition, arguing that it is not adequate to choose some a priori analytic category when studying how institutional forces affect information systems innovation. For them, in the context of IS innovation, organizations, associations of professionals and consultants, among others, are candidates to be relevant institutions (ibid: 174). In fact, information systems themselves may become institutions (Silva and Backhouse, 1997: 390; Avgerou, 2002: 30-34).

This research specifically considers as institutions the social structures which reproduce the segregation of decision-making processes, an instance of centralization which is characteristic of hierarchical organizations (drawing upon Simon, 1997 [1945]: 7, as explained in subsection 1.2.1).

In sum, the new institutionalism proposes that there are resilient social structures, called institutions, which influence social actors mainly through regulative, normative and cultural-cognitive elements, in the direction of reproducing the related social structures, although they also may do otherwise. The rest of this chapter advances the debate on how this process of institutionalisation may occur.

The next section below details Scott's (2001, 2005) proposal of conceptualizing institutions as intertwined regulative, normative and cultural-cognitive elements, and how mechanisms of legitimation and enforcement foster the resilience of institutions. Scott's framework permits the understanding of the very same social structure – such as the centralization of decision-making processes – in its many aspects, a perspective that is helpful for this investigation.

The following section explores different approaches to investigating the process of institutionalisation. Although this research draws upon different lenses, special attention is given here to Scott's (2001) framework on institutional carriers. As indicated in chapter 1, this research aims to investigate the role of institutional carriers in the formation of segregated decision-making processes in Internet-mediated communities.

Finally, the last section in this chapter clarifies that the new institutionalist approach does not imply, *per se*, that institutions are straightforwardly reproduced by social actors. Indeed, a deeper understanding of institutions permits the grasp of the forces of both inertia and change in social structures, thus preserving the perception that institutions are indeed resilient, but social actors always keep the final ability to do otherwise, as argued above in the definition of social structures. It is important to stress these contrasting

features of institutions as the empirical investigation indeed finds both elements of inertia and of change in social structures. Furthermore, this contrast supports the claim that new institutionalism is compatible with structuration theory, as proposed by Scott (2001).

There are certainly many other aspects of new institutionalism that could be explored here, but this chapter focuses only on the aspects that are directly related to the proposed research.

3.1. Conceptualisation of institutions

The idea of institutions has been conceptualised in a broad variety of forms by new-institutionalist scholars (DiMaggio and Powell, 1991a: 1). As argued above, this research has adopted the conceptualisation proposed by Scott (1998, 2001, 2005), as it is both broad and precise. Scott's framework builds upon much previous research and this thesis also explores other authors who help to clarify the elements of Scott's main arguments.

In an effort to consolidate many approaches, Scott (2005: 465) elaborates a conceptual schema, represented in table 3.1 (below), that highlights the differences between definitions that emphasise either *regulative*, or *normative*, or *cognitive* aspects (which he calls 'pillars') of institutions (see also previous development of this framework in Scott, 2001: 51-52; 1998: 134; and 1995: 35). The table indicates the relevance of rules, laws, sanctions and coercive mechanisms of diffusion, in *regulative* approaches; the relevance of certification, accreditation and normative mechanisms of diffusion in *normative* conceptions; and the relevance of prevalence (taken-for granted) models, common beliefs and mimetic mechanisms of diffusion in *cognitive* frameworks[4].

[4] This present work understands norms and rules in accordance with Burnett and Bonnici (2003: 334-335). Thus, in general, social groups enact norms as abstract ideas that members internalise in their minds through socialization. Norms establish the limits of acceptable behaviour, and the sanctions upon members who do not conform to them. Differently, rules are more explicit and formalized, also having the goal of controlling behaviour, and non-conformity with rules implies sanctions applied by members of the group, or designate authority. Nee (1998a: 86-87) completes this definition: "Formal rules are produced and

Table 3.1 Three pillars of institutions

	Regulative	Normative	Cultural-cognitive[5]
Basis of compliance	Expedience	Social obligation	Taken-for-grantedness Shared understanding
Basis of order	Regulative rules	Binding expectations	Constitutive schema
Mechanisms	Coercive	Normative	Mimetic
Logic	Instrumentality	Appropriateness	Orthodoxy
Indicators	Rules Laws Sanctions	Certification Accreditation	Common beliefs Shared logics of action
Basis of legitimacy	Legally sanctioned	Morally governed	Comprehensible Recognizable Culturally supported

(Source: Scott, 2005: 465)

The table above also helps to understand the role of *enforcement mechanisms* (coercive, normative and mimetic) and *basis of legitimacy* (legally sanctioned, morally governed and culturally supported) in these systems. As elucidated by Jepperson (1991: 145), institutions are highly dependent on sanction mechanisms (reward and punishment). In regulative and normative systems, the enforcement is supported by formal mechanisms, such as the policy and the judicial system, and informal constrains, such as signals of mild disapproval (Scott, 1994b: 66; North, 1998: 248; Nee, 1998: 9; Nee and Ingram, 1998: 19). These mechanisms are imposed by actors who have control over methods of enforcement, from centralized ones (such as state apparatuses) to decentralized ones (such as social ties) (Knight and Ensminger, 1998: 106). Power thus is behind any sanction mechanism (Scott, 1998: 316-317).

In cognitive systems, differently, patterns of conduct are controlled by how situations and identities are defined (Scott, 1994b: 66; Berger and Luckmann, 1967 [1966]: 72). In other

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enforced by organizations such as the state and firm to solve problems of collective action through third-party sanctions, while informal norms arise out of networks and are reinforced by means of ongoing social relationships."

[5] In the cited work, Scott (2005: 465) uses the term *cognitive* in the referred table, although in other definitions the author prefers the term *cultural-cognitive*. In this table, I use the term cultural-cognitive thus to keep coherence with the adopted definition of institutions.

words, taken-for-granted assumptions, and the preference for reducing uncertainty, constrain actions, even when other mechanisms of reward and sanctions are not present (Scott, 1994b: 66; Mantzavinos, 2001: 122).

Legitimacy, complementarily, is the perception (or assumption) that specific actions are appropriate within a social system of norms, values and beliefs (Suchman 1995: 574). When legitimate, actions are made to seem as natural and meaningful (ibid: 576). For Scott (2001: 60-61), legitimacy depends on conformity to formal rules (regulative systems), to moral bases (normative systems) and to taken-for-granted frames of reference (cultural-cognitive systems). As explained by Berger and Luckmann (1967 [1966]: 79, 111), shared meaning and meaningful behaviours attribute cognitive validity to institutions.

In modern societies, some authorities (such as state agents, professional bodies and trade associations) have the role of conferring legitimacy, even though these authorities may also be in conflict (Scott, 2001: 59-60). In order to obtain legitimacy – and increase their chances of obtaining higher level of trust within their social networks – social actors may conform to specific institutions, adopting behaviours which are not necessarily worthy for them considering other contextual aspects (Meyer, 1992: 263, 269; Avgerou, 2000: 236; Meyer and Rowan, 1977: 352, 354; Powell, 1991: 190).

3.1.1. Definition of institution

As cited in the introduction of this chapter, Scott (2001: 48; see also Scott, 1998: 133) proposes a general concept that incorporates three systems, as all of them are present in most institutions, in different degrees: "Institutions are social structures that have attained a high degree of resilience[6] [...] [which] are composed of culture-cognitive, normative, and regulative elements, that, together with associate activities and resources, provide

[6] Scott (2001: 48) states that resilience does not mean rigidity, as institutions are subject to incremental and discontinuous changes (see more on institutional change in section 3.3).

stability and meaning to social life". These three aspects are discussed in this subsection in detail.

As *regulative systems*, institutions are understood as rules of governance which constrain behaviour (Scott, 2001: 51; 1998: 133; North, 1998: 248). Generally, the concept of rules implies more explicit and formalized procedures, which can be formally controlled and enforced by sanctioning mechanisms (application of reward and punishment through enforcement apparatuses, such as the policy and judicial systems) (Burnett and Bonnici, 2003: 334-335; Scott, 2001: 52; Scott, 1994b: 66; Nee, 1998b: 9; Nee and Ingram, 1998: 19). In regulative systems, legitimacy depends on conformity to formal rules (such as legislation) (Scott, 2001: 53, 60). Some organizations, nonetheless, follow formal rules only ceremonially, in order to obtain legitimacy in society, meanwhile they cultivate informal behaviour that is more adequate to their broader objectives (Meyer and Rowan, 1977: 343; Nee and Ingram, 1998: 35).

As *normative systems*, institutions are related to values, conventions and norms which define the desirable, standardized structures and behaviours to different members of society (roles) (Scott, 2001: 54-55; North, 1998: 248). The concept of norms implies more abstract and informal ideas on acceptable social behaviour reinforced by social relationships (Burnett and Bonnici, 2003: 334-335; Nee, 1998a: 86-87). When individuals deviate from a norm, community members feel they have the right to apply informal sanctioning to foster compliance (such as signals of mild disapproval) (Knight and Ensminger, 1998: 109; Scott, 1994b: 66; Nee and Ingram, 1998: 19).

People conform to norms because either they fear sanctions (such as being ostracized), or they want the reward for their behaviour, or they believe that the norm is the appropriate procedure in a context (commitment to common values, sense of obligation) (Knight and Ensminger, 1998: 105, 107; Scott, 1998: 134; Burnett and Bonnici, 2003: 334-335; Nee, 1998b: 9). In normative systems, legitimacy depends on moral bases. In the case of organizations, for instance, legitimacy depends on how society values organizational goals (Scott, 2001: 60-61; 1991 [1987]: 169).

As *cultural-cognitive systems*, institutions are associated with taken-for-granted social structures: the shared conceptions and meanings that constitute the social reality of a group (Scott, 2001: 57; Jepperson, 1991: 147; Meyer, Boli and Thomas, 1994: 10)[7]. The process of institutionalisation occurs when the patterns of action are repeated, acquiring a collective taken-for-granted meaning for actors (Berger and Luckmann, 1967 [1966]: 71-75, 82; Scott, 1998: 135; DiMaggio and Powell, 1991a: 21). From this viewpoint, people make decisions based on the logic of appropriateness – their judgment about situations, identities and rules, considering the frame of reference they have interiorised through socialization (March, 1994: 58-59, 101; March and Olsen, 1989: 17, 23, 160-162; March and Simon, 1993 [1958]: 8).

In cultural-cognitive systems, the enforcement mechanisms are related to the way people define situations and identities, since taken-for-granted assumptions legitimate and constrain actions (Scott, 1994b: 66; Berger and Luckmann, 1967 [1966]: 72; Mantzavinos, 2001: 122). Berger and Luckmann (1967 [1966]: 72-73) argue that the cognitive control is inherent to the process of institutionalisation, and other control mechanisms are invoked only when this process is not fully successful. In cultural-cognitive systems, legitimacy derives from the taken-for-granted frames of reference that attribute cognitive validity to institutions (Berger and Luckmann, 1967 [1966]: 79, 111; Scott, 2001: 61).

Scott (2001: 51) submits that the regulative, normative and cultural-cognitive systems are separated only as analytical constructs, as in practice they intertwined. Thus institutions are constructed by these three systems, which are mutually reinforcing. Indeed, many scholars highlight the relevance of rules and norms in the formation of institutions, even when their main approach is cultural-cognitive. For instance, Jepperson (1991: 143, 149) links institutions with societal rules and taken-for-granted accounts, invoking regulative and cognitive aspects. In similar fashion, Avgerou (2000: 236) associates institutions with

[7] In the same direction, North (1998: 251) associates institutions to mental models, i.e. the cultural systems of classification and categories that people introject through learning process, and that somehow frame the way people interpret the world.

"rule-like procedures in society", and "taken-for-granted standardized sequences of activity". And Meyer and Rowan (1977: 341) relate institutions to reciprocated typifications that may be supported by law, by public opinion, or simply by taken-for-granted assumptions, highlighting simultaneously regulative, normative and cultural-cognitive elements.

3.2. The process of institutionalisation

This section aims to discuss how institutionalised social structures diffuse through settings, in time and space, a process which is referred to as institutionalisation (Avgerou, 2000: 236). A literature review on new-institutionalism reveals different approaches to conceptualizing and explaining institutionalisation through social settings. Without claiming exhaustive treatment, this research proposes that the process of institutionalisation has been studied mainly from three angles that overlap with each other.

The first is the cultural-cognitive approach of Berger and Luckmannn (1967 [1966]), who propose that the process of institutionalisation[8] has three phases, which have been summarized by Scott (2001: 40) as:

i. externalisation: the production of common meaning systems through social interaction;
ii. objectification: the transformation of these common meaning systems in a facticity, or reality, outside the self; and
iii. internalisation: the retrojection of these meaning systems into consciousness through socialization.

[8] Observe that Berger and Luckmann (1967 [1966]) call institutionalisation both the process of creating institutions, and the process of diffusing social structures.

The second approach is proposed by DiMaggio and Powell (1991b [1983]), for whom institutionalisation occurs through coercive, normative and mimetic mechanisms, in such a way that social structures become isomorphic. Without using the same terminology, other authors adopt similar concept of institutional diffusion, arguing that the environment exerts special influence on organizational structures, mainly through relational ties, in such a way that institutions are spread in organizational settings (Meyer and Rowan, 1977; Scott and Meyer, 1991 [1983]).

The third proposition emphasises the role of institutional carriers to spread out institutions through social settings. This is the focus adopted by this thesis as explained in chapter 1, following mainly the work of Scott (2001, 2003), although this research draws upon other authors as well, as presented below.

These three perspectives are discussed in this section, with greater emphasis to the presentation of Scott's framework on institutional carriers. It is important to highlight, nonetheless, that these approaches should not be seen as mutually exclusive alternatives, but as different forms of analysing the same processes of institutionalisation. To a certain degree, these approaches complement each other. Having a cultural-cognitive approach (Berger and Luckmann), for instance, does not preclude the recognition either of mechanisms of diffusion by relational ties and environmental influences (which also imply power relations) (DiMaggio and Powell), or of the relevance of carriers in the process of institutionalisation (Scott). Thus this section is helpful as a whole to understand the studied phenomena, and the three perspectives are present in this research, although with different emphases.

3.2.1. Berger and Luckmann's view of institutionalisation

In *The Social Construction of Reality*, Berger and Luckmann (1967 [1966]) lay out the process of institutionalisation in three phases: externalization, objectification and internalisation. In the first phase of *externalisation*, social actors, through interaction, constitute patterns of conduct that become habitualized (ibid: 74). In establishing such

patterns, social actors are able to perform the same action again and again, with economical effort (ibid: 71). This gain, nonetheless, has the cost of limiting the flexibility of agents' action (ibid: 135).

As time goes, these patterns of conduct (reciprocal typified actions) gain historicity, becoming crystallized institutions which are experienced by social actors as being an objective reality (ibid: 76, 78). Berger and Luckmann call this process *objectification* (ibid: 78), through which institutions become to be experienced as objective reality (similar to the natural world) (ibid: 77), as they are perceived as external to individuals, persistent in time and resistant to changes, rather than social structures that always can be changed by humans (ibid: 78, 106). Discussing how institutions solidify reality, Kallinikos (2006: 115) explains these resilient social structures interlock cultural, ethical and cognitive elements with legal and administrative mechanisms, and economic interests, in such a way that institutions are "hardly negotiable in the short term".

Finally, "the objectivated social world is retrojected into consciousness in the course of socialization", process that is called *internalisation* (ibid: 78-79). This process is continuous and dynamic, as there is a permanent dialectical dialogue between actors and the social world, through successive externalisations and internalisations of the social world (ibid: 78). Thus institutions define the rules of conduct, supplied by "a body of transmitted recipe knowledge", and the roles related to them (ibid: 83).

Many scholars subscribe to this idea of internalisation of social structures and consequent enactment of related roles (Meyer, Boli and Thomas, 1994: 9-10; Scott, 1994b: 67; Strang and Meyer, 1994: 104-111). For Hasselbladh and Kallinikos (2000: 710), the process of institutionalisation is sustained through its capacity for constituting forms of actorhood; thus institutional features through internalisation "shape the way actors understand themselves and their roles" (ibid: 712). Douglas (1987: 112) defends that, ultimately, institutions control people's memory, bringing to the mind only the elements which reinforce the chosen social structure, providing categories of thoughts, terms for self-knowledge and identities. For Douglas (1987: 4, 8, 45), in situation of crisis,

decisions are based on institutional thinking, rather than ratiocination; thus thinking, as cognitive processes, depends on institutions.

3.2.2. Institutionalisation as isomorphic mechanisms and organizational environment

DiMaggio and Powell (1991b [1983]: 65-66, 80) propose an understanding of the process of institutionalisation, especially in organizational fields[9], as the forces that induce individual entities to become similar to each other (isomorphism), through norms, standards, models and policies, because of the high level of interrelation and interdependency between them. The authors argue that, in becoming similar, organizations obtain the facility: to transact with others; to contract professionals; to be recognized as legitimate; and to attract grants and contracts (ibid: 73). Contextual characteristics foster isomorphism, such as the interdependency among organizations, the level of environmental uncertainty, and the level of legitimacy that professional procedures have in an organizational field (ibid: 74-76)[10]. In detail, isomorphic forces act through *coercive*, *mimetic* and *normative* mechanisms.

Coercive mechanisms result from the formal and informal pressures (such as political influence and legitimacy) organizations exert upon each other, by use of force (such as the legal environment), persuasion, or invitation, and from the cultural expectations of a society (ibid: 68-69). They argue, for instance, that the need to obtain legitimacy (and funding) from hierarchical institutions is an obstacle to any organization creating a more egalitarian governance form (ibid: 68-69).

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[9] DiMaggio and Powell (1991b [1983]: 65) conceptualize organizational fields as aggregates of suppliers, consumers, regulatory agencies and competitors (among others entities) which constitute an institutional setting.

[10] In other work, Powell (1991: 194-200) emphasises that organizations may become resistant to isomorphic forces as well, as organizations are subjected to different institutional forces. This reasoning that institutions are related to inertia and change of social structures is developed further in section 3.3.

Mimetic mechanisms stem from environmental uncertainty, as organizations understand that copying (imitating) a successful behaviour (response) is a way of obtaining legitimacy, and avoiding the risk of alternative processes (ibid: 67). The mimetic processes may be unintentional (caused, for instance, by the transfer of employees between organizations), or intentional (caused, for instance, by the influence of consulting firms and industry associations) (ibid: 69).

Finally, normative mechanisms are associated with professions, i.e. the collective group of people who define and control how to do a specific work (ibid: 67, 70). This mechanism stems from formal education, professional networks (such as professional associations) and on-the-job socializations, factors that generate professionals with similar profile, who are, to a high degree interchangeable (ibid: 71, 72). Professionals thus are strongly subject to mimetic forces and exert mimetic forces in organizations (ibid: 71, 72).

This idea of organizational isomorphism is also present in Meyer and Rowan (1977), for whom two main aspects justify structural similarity in modern organizing. First, organizations become isomorphic in order to have a greater ability to manage increasing interdependencies among formal organizations (ibid: 346). Second (and most importantly in their article), organizational structures are the enactment of rationalized myths in modern societies, independent of their environments and relational networks (ibid: 346). Meyer and Rowan state organizations adopt isomorphic structures in order to improve their legitimacy in society (among professionals and consultants, for instance), and their chances of survival, as they receive more resources when considered legitimate (ibid: 348-352).

Without using the same terminology as DiMaggio and Powell's (1991b [1983]) arguments on isomorphic mechanisms, other authors discuss the process of institutionalisation as being the influence of the environment in organizations (from local

to global levels). For these authors, the institutionalised environment provides patterns of organizing, from which organizations draw their structures.

In this direction, Meyer (1994: 32), for instance, argues that the environment validates types of organizations (their identity, such as being a hospital), their appropriate structural forms (such as incorporating professionals from specific areas), and activity routines (such as types of therapy) (ibid: 33-34). Scott and Meyer (1991 [1983]: 123, 129, 136) describe the same process in societal sectors[11], whose regulatory agencies, professional and trade associations, and generalized belief systems define the purposes and goals of the sector; the means and procedures to pursue sector objectives; and how funds are allocated within a sector. Societal sectors thus influence structures, processes and outcomes of organizational units that aim to obtain support and legitimacy from society (ibid) (see also Meyer and Rowan, 1977, for similar discussion on the role of relational networks in the process of institutionalisation).

Complementarily, Scott (1991 [1987]: 171; 1992a: 14-16) stresses the relevance of relational networks, being the way in which organizational contexts are increasingly organized, and how their level of centralization, formalization and bureaucratization affects the related organizations. Scott claims that institutional environments include "the rule and belief systems as well as the relational networks that arise in the broader societal context" (1992a: 14), and that powerful actors exert special influence upon others through these relational networks (Scott, 1991 [1987]: 171-181).

In another work, Scott (1992b: 161-174) highlights that organizations are nested simultaneously in various environmental levels, and that each level influences organizations differently. Similarly, Avgerou (2000: 234-235) emphasises that

[11] For Scott and Meyer (1991: 108), the concept of societal sector means "all organizations within a society supplying a given type of product or service with their associated organizational sets: suppliers, financiers, regulators, and so forth". This concept is similar to DiMaggio and Powell's idea of organizational field (1991b: 65).

environmental influences stem from international, national, sectoral and intra-organizational levels, which may conflict with each other.

3.2.3. Institutionalisation through institutional carriers

This literature review on new institutionalism allows a mapping of the possible frameworks for understanding the process of institutionalisation. Scott's (2001, 2003) framework on institutional carriers has been chosen as the most comprehensive one, considering how this author combine regulative, normative and cultural-cognitive systems to understand institutions and their diffusion through social settings. This subsection thus presents a synthesized definition of institutional carriers, and a short summary on how different authors have incorporated institutional carriers in their studies of institutionalisation (even when they do not use the term carrier explicitly). The next subsection introduces Scott's analytical framework, as it is used in this research.

After having decided this study would investigate a process of institutionalisation of Internet-mediated communities, it was necessary to develop a structured framework that would help to operationalize the investigation. From the literature review on new institutionalism, it was clear that many authors discuss the process of institutionalisation in abstract ways, without offering a model for approaching the field in a more systematic manner. Indeed, this research agrees with Hasselbladh and Kallinikos (2000: 699-700), who drawing upon Berger and Luckmann (1967 [1966]) argue that new institutionalists should go beyond an idealistic approach to the diffusion of institutions and consider how ideas are embedded in *durable social artefacts*.

In this work, Hasselbladh and Kallinikos state that meaning systems and rationalized beliefs influence actors and organizations, but institutions are not disembodied ideas that exist only at the level of subjective agreements among local actors (ibid: 702). Bureaucracies, for instance, are objectified in legal and operational texts, models, and administrative systems, based on verbal and numerical techniques to organize and to control goals and operations (ibid: 703).

The literature on institutional carriers offers an interesting way of objectifying the process of institutionalisation from abstract ideas to durable social artefacts, as proposed by Hasselbladh and Kallinikos (2000). In this direction, drawing upon Berger and Luckmann's (1967 [1966]) concept of objectification (as defined in subsection 3.2.1), Weber (2002 [1930]; 1978 [1956]), Berger, Berger and Kellner (1973), Jepperson (1991), Meyer (1994), DiMaggio and Powell (1991b [1983]), and Scott (2001), this work relates the concept of carrier to, *inter alia*, the social strata, actors, organizations, rules, norms, cognitive schemas and artefacts in general that carry institutionalised social structures from one to another setting in time and space. Many authors have discussed the role of institutional carriers in the diffusion of institutions, even when they do not use specifically the term carrier; some of their concepts are discussed next, before subsection 3.3.4, which introduces Scott's framework of institutional carriers.

Weber, for instance, studies how social strata, groups and organizations were responsible for the diffusion of religious ethics and values in different societies. In *The Protestant Ethic and the Spirit of Capitalism* (2002 [1930]), Weber focuses on how the Protestant ethic (from religious organizations such as Calvinism, Pietism, Methodism, Baptists and Quakers) influenced the methodical-rational organization of work. More specifically, argues the author, the Protestant ethic legitimated the idea of profit, and spread the conception that hard work is a defence mechanism against material temptations and a signal of spiritual salvation (ibid: 17, 26, 105-108). He explains that these religious groups and organizations had a particular way of thinking ('frame of mind'), and carried this model throughout the world, influencing other social carriers – such as businesspersons, workers and middle classes – which, in turn, were also responsible for spreading this model that supports modern capitalism (ibid: 18-20, 224). Also in *Economy and Society* (1978 [1956]: 468-515), Weber analyses how different social strata and organizations (such as peasantry; warrior nobles; ascetic Protestants; small businessmen; artisans; and plebeian, pariah and upper class groups) were carriers of religious beliefs in different societies and periods.

Drawing upon Weber's work, Berger, Berger and Kellner (1973: 16) submit that institutions of *technological production* and *bureaucracy* are the primary carriers of social change in modern societies. For them, processes, actors, mass media and mass education bombard people with ideas and models of conduct, carrying institutionalised mental schemas to the level of consciousness (ibid: 43, 65, 92). These authors also stress that diffused themes related to technological production and bureaucracy have become independent of their primary carrier (original institutions), as these models have spread to other spheres of social life. In so doing, they promote social changes, such as the migration of the concept of *maximization of results* from the sphere of technological production into the spheres of education and management of psychological difficulties (ibid: 16, 22, 34-35, 40, 43). The same has happened in relation to the attempt to organize households and families in the fashion of a bureaucratic office, suggest the authors (ibid: 49).

Discussing the mechanisms of institutional isomorphism, DiMaggio and Powell (1991b [1983]: 67-74) list some institutional carriers. While they do not use the term carrier, their intention is clearly very similar when they refer to: legislation; regulation; curricula; technical requirements; standard operation procedures; accounting practices; performance evaluation; services infrastructures (such as in telecommunications and transport); standard criteria adopted by funding organizations and agencies; legitimate organizational models; professionals and their associations; universities; trade associations; professional networks; specialized magazines; hierarchical status in a community (roles); career paths and titles; and concepts of status and prestige.

The list of authors discussing institutional carriers goes further. Jepperson (1991: 150), for instance, suggests that formal organization, regimes (codified rules and sanctions, such as legal systems) and cultures are institutional carriers. Meyer (1994: 36-44) compiles an alternative list, comprised of: contents (such as ideologies); elites; successful organizations; world-level organizations (such as the United Nations and the World Bank); professionals; consultants; nation-states (and the related legal systems) and science (or knowledge). Scott and Meyer (1991 [1983]: 123, 129, 136), discussing the

environmental influence in organizational structures, list the role of regulatory agencies, professional bodies, trade associations and belief systems. Meyer and Rowan (1977: 341, 343, 347) cite legal systems, rules, norms and rationalized social structures. North (1998; 251) contends that mental models, learned through socialization, carry institutions.

Empirical studies also demonstrate how institutional carriers promote the diffusion of social structures. Souza *et al.* (2004: 636), for instance, researching face-to-face informal groups that create virtual communities, affirm that groupware systems encode group-structuring rules (such as the obligatory presence of an owner or administrator who has privileged rights in relation to other members), thus forcing a process of institutionalisation, as community members should follow rules that they have not established through social interaction. Hamilton and Feenstra (1998: 171) point out how the standardization of organizational processes (such as financial accounting systems), and the formation of regulative organizations (such as banks, stock markets and government agencies) influence organizational behaviour, as actors evaluate themselves and others in accordance with these formal standards, internalising the need to conform to them. And Björck (2004: 2-4) argues that international legislation on standards, organizational formal policies, routines, market competition, consultants and certified security officers are related to the process of institutionalisation of information systems security in organizations.

3.2.4. Scott's framework of institutional carriers

As introduced above, this thesis follows specifically Scott's framework (2001, 2003) to study a process of institutionalisation of Internet-mediated communities. Regarding institutions as being intertwined regulative, normative and cultural-cognitive systems (as discussed in section 3.1), he suggests relating institutional carriers to each of his three pillars. Scott (2001: 77) submits that institutions are embedded in repositories or carriers, and identifies four groups of carriers: symbolic systems, relational systems, routines and artefacts.

Scott claims that *symbolic systems* (rules, values, culture) are both social phenomena external to actors and "subjective, internalised cognitive frames and beliefs" (2001: 78), which are present in the mind of individuals, as ideas and values (ibid: 79). *Relational systems* (governance systems, authority systems, identities) are related to role systems: the relational expectations related to a social network (ibid: 79). *Routines* are patterned actions and procedures (encoded in repetitive activities) based on actors' tacit knowledge (ibid: 80, drawing also upon Winter, 1990: 272-275). Finally, *artefacts* are tangible objects, such as technology, while emphasising that they are socially constructed, and people maintain a level of flexibility in the understanding on how to interact with artefacts (ibid: 81). Table 3.2 summarizes this schema.

Table 3.2 Institutional pillars and carriers

Carriers	Pillars		
	Regulative	**Normative**	**Cultural-cognitive**
Symbolic systems	Rules Laws	Values Expectations	Categories Typifications Schemas
Relational systems	Governance systems Power systems	Regimes Authority systems	Structural isomorphism Identities
Routines	Protocols Standard operating procedures	Jobs Roles Obedience to duty	Scripts
Artefacts	Objects complying with mandated specifications	Objects meeting conventions standards	Objects possessing symbolic value

Source: Scott (2001: 77)

In a more recent work, Scott (2003) extends the discussion on carriers, exploring different kinds of symbolic systems and relational systems (routines and artefacts are not discussed in this article). In terms of *symbolic systems*, the author reinforces the relevance of laws (among other examples) but he explores, also, the need to focus on *media* and *interpretation* (ibid: 884-886). He argues that even laws and regulations, which are extremely influential as symbolic systems, are subjected to different interpretations in

different contexts. Different media also have differing capacity to diffuse institutional forms in time and space. The author thus proposes that institutional carriers are not neutral vehicles of social structures, as they affect the elements they transmit (ibid: 879).

In terms of *relational systems*, including individual and collective actors, Scott (ibid: 886-890) discusses how they affect the process of diffusion of innovation and reforms, which reshape organizational boundaries. Again, the *intermediaries* in relational systems (such as governmental agencies, trade associations, unions, lawyers and also digital technologies) are not neutral, but active participants in the construction of the diffused ideas. The consensus among major players influences the diffusion of an innovation (and thus its institutionalisation), argues Scott (ibid) (a process that Swanson and Ramiller, 1997, call "organizing vision"). In another work, Scott (2005: 468) proposes that different kinds of actors have different impact as carriers of institutions, arguing that the understanding of interactive models – how agents interact in specific situations – undermines deterministic arguments about the diffusion of institutions.

In these works, Scott (2003, 2005) emphasizes the relevance of specific contexts, which affect how institutional carriers diffuse social structures. Indeed, this thesis agrees that the study of carriers demand an understanding of the related contexts, as suggested as well by other authors. Weber (2002 [1930]: 5-12; 32-33), for instance, explains how the cultural contexts have an impact upon the diffusion of institutions. In the same fashion, Berger, Berger and Kellner (1973: 92), drawing upon Weber, develop the idea of "variant institutional vectors": the contextual vectors that interfere in the process of institutionalisation, altering the impact of carriers. They argue that the diffusion of technological production models depends, among other factors, on the degree of local technological development, the political environment and the level of resistance to foreign cultures in a society (ibid: 97-98, 114, 121-123). In sum, they say that the diffusion capacity of a cognitive model depends on the readiness of a society to internalise specific new structures, as some processes of institutionalisation demand deep changes in the traditional way societies do things and understand the world (ibid: 113, 118).

3.3. Institutional change and inertia

The discussion on the nature of institutions and the processes of institutionalisation may induce the impression that these social structures impose themselves, in their totality, upon social agents. Indeed, institutions have an inherent level of inertia and resist local modification. Scholars, nonetheless, have emphasised the role of agency in changing social structures (as discussed in the introduction of this chapter), although people face obstacles in this process. This section discusses shortly how institutions are related to processes of inertia and change, in the context of this research.

As discussed previously, this thesis is concerned with a process of institutionalisation, focusing on how institutional carriers diffuse social structures through Internet-mediated communities, thus focusing mainly on the inertial aspects of the studied hierarchical institutions. It is necessary, however, to understand also how institutions are changed, as this investigation may also uncover other kind of phenomena that have not been revealed during the pilot study.

Thus this section will firstly clarify that this research understands institutions from both standpoints, as forces of inertia and as having the potential for being changed. Secondly this section will prepare a theoretical framework to investigate the studied phenomenon considering the possibility of finding elements of both inertia and change in this process of institutionalisation.

In a nutshell, drawing upon the literature reviewed above, this section will show how institutions are seen as constraining and enabling action, having possibilities of promoting both inertia and change. On the one hand, institutions constrain behaviour – defining rules, norms, cognitive schemas, roles and identities – thus providing stability and order; but, on the other hand, institutions support and empower activities, grounding both incremental and revolutionary changes (Scott, 2001: 50; Jepperson, 1991: 146; Peters and Pierre, 1998: 566). Some conditions can strongly influence the possibility of change, such as the degree of institutionalisation of different social structures: the

meaning and legitimacy that people attribute to them (Powell, 1991: 195, 199; Avgerou, 2002: 37).

The outcome of these conflicting forces cannot be identified precisely, as these processes are affected by multiple, ambiguous intentions, generating unintended consequences (March and Olsen, 1989: 65). As proposed by Peters and Pierre (1998: 567), this dichotomy between rigidity and flexibility can be better understood if the theory highlights the temporal dynamic of institutions: in the short term institutions tend to be seen as structures but in the long term they show their inherent flexibility.

The two subsections below explain in more detail these two divergent forces of inertia and change in institutional environments, explaining the main drivers of each process.

3.3.1. Aspects that favour institutional inertia

Scholars point out many reasons to relate institutions to inertial forces. Reviewing the literature on new institutionalism, some aspects are recurrent: the costs and risks of promoting institutional change; the interdependence between agents; the cognitive difficulty of creating alternatives in face of taken-for-granted schemas; and the interest of powerful social actors in keeping current institutions. These ideas are clarified below.

Starting from the idea of costs, the construction of institutions implies, necessarily, the mobilization of resources that often cannot be recovered in face of institutional change, thus creating an obstacle to modifying established social structures (Stinchcombe, 1968: 120-124; Powell, 1991: 194; Ingram, 1998: 260; DiMaggio and Powell, 1991a: 11; Lanzara, 1998: 20). Furthermore certain costs, there are also the uncertain ones, as institutional change is also related to increasing levels of risks and ambiguities, which again favour the reproduction of old social structures, to the extent that people are risk-averse (Lanzara, 1998: 20; DiMaggio and Powell, 1991a: 4). Naturally, the aspect of costs is not homogenous, thus different social groups and organizations may see

differential advantages from promoting institutional change (Ingram, 1998: 262; Clements and Cook, 1999: 452).

From the point of view of relational networks, the interdependency between entities reinforces institutional inertia, especially in homogenous environments (Powell, 1991: 191; DiMaggio and Powell, 1991a: 11; Ingram, 1998: 260; March and Olsen, 1989: 57; Clements and Cook, 1999: 450). This interdependency in fact reinforces path-dependent processes, in which initial choices restrict future options, favouring thus incremental rather than radical changes from the initial choice onwards (Powell, 1991: 191; March, 1994: 96; Nee and Ingram, 1998: 30; North, 1998: 252) (see also subsection 3.3.2, which considers the argument that relational networks may favour institutional change in some contexts).

Cognitive reasons also make institutions more resistant to change (Powell, 1991: 192; DiMaggio and Powell, 1991a: 11; Clements and Cook, 1999: 445, 454-458; March and Olsen, 1989: 55; Avgerou, 2002: 37; Lanzara, 1998: 13-14). The argument here is that, through models, schemas and scripts, institutions influence how people understand the world, their interests and their identities. Taken-for-granted behaviour is thus perceived as natural and legitimate, or even as the only conceivable alternative, which nurtures resistance to change, as actors find it difficult to imagine or accept other possibilities. In this direction, the way people understand their roles (and adequate forms of actorhood) are obstacles to institutional change (see discussion on internalisation of social structures in subsection 3.2.1).

Finally, powerful agents defend institutional inertia when the current structures favour their interests in controlling more resources (Powell, 1991: 191; Stinchcombe, 1968: 107-108). Lanzara (1998: 13) describes how institutions support the unequal distribution of competencies and resources in societies, permitting powerful groups to continue to control most resources. As attempts to promote changes generally depend, in some way, on old structures, these structures and their agents can sabotage the establishment of new institutions (ibid: 13).

3.3.2. Aspects that favour institutional change

In spite of their resilience, institutions may change, or even collapse, because social actors always maintain a degree of freedom in the enactment of social structures. In this subsection, some arguments are explored which explain how agency changes institutions. These arguments are not exhaustive, but they aim to picture some interpretations which help to understand institutional changes.

In relation to the nature of human action, one important argument is that social actors always have agency to create, change, resist, violate and ignore rules, norms and cultural-cognitive models; and thus make different choices (Scott, 2005: 467; 1994b: 60, 76-77; March, 1994: 73-76; March and Olsen, 1989: 24, 34, 48; Jepperson, 1991: 159). Institutions do not speak for themselves; social actors need to interpret how to apply appropriate rules and identities to ambiguous situations.

This process is dynamic and context-dependent, allowing new interpretations that promote institutional changes (March, 1994: 61, 68, 78-79; March and Olsen, 1989: 24, 58-65; Mantzavinos, 2001: 90-94). Furthermore, actors have different roles and identities, in different institutional environments, thus they need to ponder which action, from a range delimited by the norms of institutionalisation, is legitimate in each circumstance, so opening opportunities to institutional change (Scott, 2005: 467-468; Mantzavinos, 2001: 95; Lanzara, 1998: 20; Jepperson and Meyer, 1991: 226-229; March, 1994: 69-70).

Furthermore, there is the nature of institutions themselves. The ambiguity of rules, norms, roles, and situations demands that agents interpret institutions in order to choose the one that best apply to the situation and so there is not an automatic compliance (March, 1994: 61; March and Simon, 1993 [1958]: 12; Klijn, 2001: 138; Scott, 1994b: 76; Meyer, 1992: 263; March and Olsen, 1989: 22, 24; DiMaggio and Powell, 1991a: 29; Clements and Cook, 1999: 448-449; Nee, 1998a: 87-88; Scott, 2005: 466). In addition, the very contradictions among different institutions are also source of changes, as agents, in observing the conflict, do not see institutions as inevitable (March and Olsen, 1989: 167;

Clements and Cook, 1999: 449-450; Scott, 1994b: 75-76, 2005: 466, 449; Avgerou, 2002: 39-44).

The relevance of context is also important in institutional change. Exogenous, sometimes disruptive, forces can promote institutional change (DiMaggio and Powell, 1991a: 30; Powell, 1991: 200; Peters and Pierre, 1998: 571-572; Clements and Cook, 1999: 447-448; March and Olsen, 1989: 167-170; Lanzara, 1998: 20; Jepperson, 1991: 145). As presented by Scott (2005: 473-475), in modern societies, indigenous institutions are increasingly exposed to external conceptual models, carried across sectors, fields and countries, by consultants, media companies, markets, global inter-governmental agencies, international non-governmental organizations and international professional bodies.

Thus local institutions are increasingly facing many forms of external influence. Here the idea of relational networks, which may promote inertia (as discussed in subsection 3.3.1), can also be the source of change, especially in heterogeneous environments, as transformations in one institution affect others, generating the need of arrangements until achieving a new equilibrium (March and Olsen, 1989: 57; Peters and Pierre, 1998: 574; Clements and Cook, 1999: 447, 450-451; Orlikowski and Barley, 2001: 154).

Finally, conflicts of interests and power disputes are strongly related to processes of institutional creation and change, as institutions favour the interests of those with greater bargaining power in society (Eggertsson, 1996: 12; Mantzavinos, 2001: 96; Clements and Cook, 1999: 453-454; Ingram, 1998: 258; DiMaggio and Powell, 1991a: 30-31; Knight, 1992: 8; Knight and Ensminger, 1998:106-108; Nee and Ingram, 1998: 27, 36; North: 1990: 68, 101; Stinchcombe, 1968: 112, 186; Jepperson and Meyer, 1991: 226). Considering that institutions embed conflicts of interests and power relations, these authors argue that dominant actors essay strategies of control and enforcement, in order to acquire or maintain power, preserving their interests, in the elaboration and change of institutions. Actors create, maintain and change institutions in accordance with their interests; thus institutional changes always embed a new disposition of power relations (ibid).

4. Methodology: A qualitative investigation

As elucidated in chapter 1, this research aims to investigate how institutional carriers influence the emergence of segregated, centralized decision-making processes in Internet-mediated communities despite their declared intention to create non-hierarchical (network) governance structures. In order to conduct this investigation, this research selected a group of four Brazilian environmental-education Internet-mediated communities, which have also been part of a previous pilot study to ground this proposal in empirical data.

This chapter on methodology continues explicating how this research develops, focusing specifically on exposing its *conceptual framework* (the understanding that institutionalised social structures are human creations that influence their own behaviour; and that people construct their interpretation of social phenomena through interacting with each other), its *research design* (multiple case-study approach) and its *methods* (qualitative research based on in-depth, semi-structured individual interviews). The sections below detail these aspects, presenting both the theoretical arguments that support this thesis and describing how this investigation has been conducted empirically.

The first section clarifies the interpretive orientation of this research, drawing upon concepts of social constructionism to understand how institutions influence behaviour patterns, highlighting as well the relevance of the context and agency in the emergence and reproduction of social structures. Furthermore, it shows that the qualitative approach is consistent with an interpretive orientation, and that the construction of meaning emerges from the interplay between researcher and interviewees.

The second section presents the arguments for adopting a multiple case-study research design. The third section discusses the data-collection methods (in-depth, semi-structured, individual interviews), and how this research conducts the transcriptions of tapes, the coding of the obtained data and the translation of excerpts. Finally, the fourth

section exposes this research concerns with its quality, mainly in relation to criteria of validity, reliability and generalizability.

4.1. Conceptual framework and qualitative research

This thesis is grounded in the idea that people, through interaction, create social structures, and that these structures influence human behaviour (arguments that are detailed in the introduction of chapter 3). Thus social order emerges from people's interactions, in a long-term historical process in which humans make their activity meaningful in a socio-cultural context (Berger and Luckmann, 1967 [1966]: 69-72; Crotty, 1998: 44, 53; Orlikowski and Baroudi, 1991: 13; see also Heidegger, 1962, p. 41, on how historicity frames human understanding).

Through socialization, people construct inter-subjective interpretations of their social reality (Berger and Luckmann, 1967 [1966]: 37-40; Crotty, 1998: 42-43, 53-55; Knorr-Cetina, 1981: 4, 9; Schwandt, 2000: 198). Thus, in spite of having individual perspectives, people have a common ground in society through which to understand social structures, "a good deal of cognitive consensus", in Meyer's words (1992: 264). The social structures that endure in time become institutions (as discussed in chapter 3).

As argued by Berger and Luckmann (1967 [1966]: 35, 37-40), people perceive social life as being something enduring, a phenomenon that has patterns and order, a taken-for-granted reality that presents itself to them as independent of their action, although humans always keep the agency to change social structures (Berger and Luckmann, 1967 [1966]: 99; Giddens, 1984: 15; Hacking, 1999: 2; Orlikowski and Baroudi, 1991: 14). In other words, although institutions are social constructions, they are perceived as an objectified reality after their construction (Berger and Luckmann, 1967 [1966]: 76). As discussed in chapter 3, the fact that social structures are supported by reward and punishment mechanisms reinforces this perception of institutions as external facts (Berger and Luckmann, 1967 [1966]: 72-73; Scott, 1991 [1987]: 178, 181; 2001: 52-55; Jepperson, 1991: 145).

Indeed, although these institutional generative mechanisms influence behaviour, they are not able to cause behaviour. As argued by Sayer (2000: 15, 23), the final effects of institutions on behaviour depend on contextual aspects, which explains the emergence of phenomena that are not only a reproduction of patterned behaviour. And, further, the variety of contexts is such that one should not expect "regular association between causes and effects" in social phenomena (ibid: 15-16). Following this reasoning, many scholars recommend researchers to pay special attention to the context in which social actors are embedded (Walsham, 1993: 53-55; Avgerou and Madon, 2004: 162; Heek, 2000; Sayer, 2000: 17).

Furthermore, the context in which agency operates is important in the reproduction or change of institutions. Indeed, as said above, this thesis contends that social structures only exist as far as people reproduce them, and that people may change social structures (Giddens, 1979: 69; 1984: 17; Scott, 2001: 67; Bhaskar, 1998: 216, 220; Manicas, 1998: 318, 320; see discussion on chapters 1 and 3). This approach, which balances the relevance of social structures and agency in society, in similar vein to structuration theory (Giddens, 1979, 1984), is compatible with this research's theoretical framework, new institutionalism, as proposed by W. Scott (2001: 67, 75) and J. Scott (1995: 214) (see also Barley and Tolbert, 1997: 93; and Klijn, 2001).

4.1.1. Interpretive orientation

Starting from this conception on how social structures emerge and influence social actors, and the idea that people endow their social structures with inter-subjective meaning, this research follows a qualitative methodology, grounded in an *interpretive orientation* (which Habermas, 1981 [1968]: 308, calls the *historical-hermeneutical* approach). This thesis follows the interpretive school in arguing that social research aims to understand phenomena through accessing the meanings participants assign to them (Walsham, 1993: 5, 8-10; Orlikowski and Baroudi, 1991: 5, 14; Crotty, 1998: 67-71; Habermas, 1981

[1968]: 309-310). As argued by Heidegger (1962: 36-37; see also Gadamer, 1989 [1975]: 259-260; and Bauman, 1978: 148), humans naturally interpret themselves in relation to the way they understand the world. Similarly, Schutz (1990 [1962]: 57) states that people access the social cultural world through understanding (*Verstehen*).

The concept of understanding in Heidegger and Schutz is said to be inter-subjective because people construct a common interpretation through social interaction (Heidegger, 1962: 41; Schutz, 2003: 137, 139; 1990 [1962]: 53, 10, 133)[1]. From a similar conception, Gadamer (1989 [1975]: 304, 385, 389) proposes that people come to a common understanding, through conversation, interpreting each other's viewpoints, thus broadening their own horizon (without giving up previous ones) through acknowledging other perspectives (see also Habermas, 1981 [1968]: 309-310).

Following Heidegger (1962), Schutz (1990 [1962]; 2003: 137-138), Gadamer (1989 [1975]), Berger and Luckmann (1967 [1966]: 37), Giddens (1995: 240), Bauman (1978: 14, 180-182) and Sayer (2000: 17), this research investigates the chosen social phenomenon through interpreting how participants understand their experiences, attitudes and motivations, in specific contexts. This thesis sees people as the primary source of data in social research, justifying thus the qualitative approach based on in-depth, semi-structured, individual interviews, to explore a phenomenon in its context (Mason, 2002: 1, 3, 56; Hakim, 2000: 34; Esterberg, 2002: 2-3; Orum, Feagin and Sjoberg, 1991: 23; Sayer, 2000: 23).

The choice of in-depth interviews implies that this researcher and the interviewees reciprocally influence each other in the construction of a common understanding through interaction (Mason, 2002: 64, 68; May, 2001: 127; Orlikowski and Baroudi, 1991: 14; Klein and Myers, 1999: 74; Holstein and Gubrium, 2003: 4, 14; Walsham, 1995a: 77; 1993: 8). Thus the emergent interpretation is dependent on the circumstances of its production, grounded in both the researcher's and the interviewee's previous conceptions

[1] Schutz (1990 [1962]: 11, 13) also ponders that part of human knowledge derives from individual experience.

(ibid), which implies that attempts of replicating such a study will have intrinsic limitations (see subsection 4.4.2).

In addition, this research contends that the only way to understand phenomena is from a particular viewpoint, which permits the researcher to attune to the world within a limited range of possibilities (Gadamer, 2003 [1960]: 159; Habermas, 1981 [1968]: 309; Bauman, 1978: 163, drawing upon Heidegger). For Schutz (1990 [1962]: 5), knowledge depends on how our mind selects impressions from the universal context, in accordance with our interests and conceptual frameworks. This implies that one does not face 'pure' facts, but always interpreted ones, i.e. facts that have meaning in a social context (ibid).

Following Heidegger and Schutz, Gadamer (1989 [1975]: 302) argues that we cannot bracket history, putting ourselves out of a situation, as we are essentially historical beings, and a situation always implies a viewpoint. Focusing on cognitive aspects, Goodman (1978: 2) agrees that our way of describing phenomena is confined to 'frames of reference', as there is no perception without conception (ibid: 6). In the same direction, Weber (2003 [1904]: 118) and Feyerabend (1993: 211-212) emphasise that the observation of phenomena depends fully on the theories (or viewpoints) that support an observation.

This thesis thus assumes an *epistemic relativism* (Knorr-Cetina and Mulkay, 1983: 5): the idea that knowledge is relative and subject to changes, being a social product which depends on specific historical, cultural and conceptual frameworks, as well as on power relations (Jones, 2003: 148, 153; Crotty, 1998: 47, 64; Schwandt, 2000: 198-201; Sayer, 2000: 47; Walsham, 1995b: 376; Giddens, 1995: 240). As explained by Kuhn (1962: 5, 9, 109), human sensory experiences change in the face of historically different conceptual frameworks (paradigms), because these frameworks establish the legitimate conceptions of phenomena, questions, methods and acceptable answers.

Accepting epistemic relativism, nonetheless, does not mean endorsing *judgmental relativism*, which is the idea that anything counts as an equally valid interpretation of data

(Knorr-Cetina and Mulkay, 1983: 5). As the authors clarify, not all understandings are equally adequate to elucidate social phenomena (ibid: 6). Gadamer (1989 [1975]: 267) comments that the process of understanding should be grounded in legitimate fore-meanings rather than arbitrary ones. Bauman (1978: 20-21, following Heidegger) and Sayer (2000: 46) contend that valid interpretations should be contextualized, thus avoiding a situation in which any interpretation is regarded as equally acceptable.

This research thus argues that there are many ambiguous interpretations of phenomena, but that it is necessary to construct one that is more convincing (Walsham, 1993; Sayer, 2000: 47; Goodman, 1978: 21), without claiming that the emergent interpretation it the correct (Taylor, 2003 [1971]: 182-184; Bauman, 1978: 10). In this direction, this researcher draws upon the concept of *hermeneutical circle*, agreeing that the process of understanding depends on the continuous interplay between the parts and the whole from a standpoint, in an effort to tune competing meanings to the context (Heidegger, 1962: 38, 191-195; Gadamer, 1989 [1975]: 266-267, 290-292). See further discussion on research quality in section 4.4.

4.2. Multiple case-study research design

This thesis follows a case-study research strategy. Many scholars have argued that this design permits obtaining a detailed picture from a contemporary, complex social phenomenon in its natural context (Yin, 1981: 59; 2003: 2, 13, 15; Benbasat, Goldstein and Mead, 1987: 370; Hakim, 2000: 59; Sjoberg *et al.*, 1991: 52; Hammersley and Gomm, 2000: 3; Stake, 1994: 239). This investigation also follows Yin (1981: 59; 2003: 7), Benbasat, Goldstein and Mead (1987: 370, 372), and Walsham (1995a: 74), considering that the case-study strategy is preferred for investigating *how* and *why* questions. Moreover, Sjoberg *et al.* (1991: 56) recommend the case-study approach to study decision-making processes, and Walsham (1993: 14) says it is adequate to conduct interpretive researches. Thus, for multiple reasons, the case-study strategy fits with the

present investigation, which, as presented in chapter 1, proposes to study how a process of institutionalisation occurs through institutional carriers.

More specifically, this research adopts a multiple case-study strategy, understanding that this approach permits the replication of the cases[2] (Yin, 2003: 47; Hakim, 2000: 62; de Vaus, 2001: 240). This thesis analyses the phenomenon of institutionalisation of Internet-mediated communities through the theoretical lens of new institutionalism. It is thus expected that the four studied cases help in obtaining similar results (*literal replication*), under similar contexts; and/or contrasting results (*theoretical replication*) in different contexts, which may be understood through the chosen theoretical lens (Yin, 2003: 47)[3]. Although this work does not seek general laws that can be applied to a large population, it conceives that case studies may help to construct and extend theory, as proposed by Yin (1981: 63), and Benbasat, Goldstein and Mead (1987: 369-370, 373) (see discussion of *analytic generalization* in subsection 4.4.3).

4.2.1. Case selection

There are clear rationales for selecting the four Brazilian environmental-education Internet-mediated communities as the empirical objects of this research. At the macro level, this research is motivated by the need to investigate communities that are associated with social movements, in face of the political relevance of civil society organizations in the contemporary world (as argued in subsection 1.4.2).

At the micro level, this investigation has two main reasons for choosing these communities. First, they have a particular level of entanglement with formal organizations, such as government offices, universities and non-governmental organizations (NGOs), even to the extent of depending on these organizations for their

[2] The concept of literal and theoretical replications in multiple-case studies is related to the cases themselves, and cannot be confounded with the replication of researches, issue discussed in section 4.4.

[3] This idea of replicating is a theoretical proposition. Only the collect data shows whether the results are similar or different, and how the results are related to the theoretical framework.

offices and websites, and to organize their events. Thus these collectivities have a form of dependency that characterizes them as a specific model of Internet-mediated communities.

In this set of four communities, Rebea and Repea have received government funding and are supported by NGOs. Reasul has emerged as a result of government funding. Although some Reasul members argue that this community had established links before receiving this public support, they commonly accept that this sponsorship has been fundamental to their organization. A private university (Univale) also supports Reasul through the provision of offices, computers, Internet access and professional support. Finally, Remtea has not received government funding directly, but the community receives government assistance for their face-to-face events and it is anchored in a public university (Universidade Federal do Mato Grosso), which offers the community many benefits (such as offices, computers, Internet access and professional support).

Second, these communities possess established decision-making processes. Indeed, the studied communities often take political positions, mobilize efforts for manifestations, arrange face-to-face meetings and organize themselves to participate in public debate with specific proposals, among other activities, which demand explicit decision making. Naturally, in having these activities, they differentiate themselves from communities that are concerned mainly with exchanging information and other material, activities which does not demand such a level of coordination.

Having these characteristics, these collectivities offer an interesting opportunity for investigating the institutionalisation of social structures related to decision-making processes in virtual communities. Indeed, as discussed in chapter 1, a pilot study with these communities (and two other similar ones that are not included in this further investigation[4]) indicates that at least some institutional carriers influence the way these

[4] The other two communities are: REA/PB – Rede de Educação Ambiental da Paraíba (Paraíba Environmental-Education Network), and RAEA – Rede Acreana de Educação Ambiental (Acre

communities structure their decision-making processes. Thus there are reasons to expect that the proposed investigation would allow answering its research question.

The selection of cases by considering previous knowledge about the empirical object has frequently been legitimated (Hakim, 2000: 62; Patton, 2002: 234; Hamel, Dufour and Fortin, 1993: 41; Miles and Huberman, 1994: 27). The choice of these communities is thus pragmatic, as this research focuses on how these cases may improve our comprehension of the institutionalisation process of Internet-mediated communities, in the light of the chosen theoretical lens (new institutionalism, specifically through the analysis of institutional carriers) (Stake, 1995: 3; 1994: 237; Patton, 2002: 234, 238, 239; Miles and Huberman , 1994: 27-28; Ragin, 1995 [1992]: 42; Hakim, 2000: 170).

In determining the requisite number of cases for a comparative study such as the proposed here, Patton (2002) and Yin (2003) avoid establishing a simple numerical criterion. Patton (2002: 244-245) argues that there are no rules for defining the number of cases in a comparative study, as the validity of the study depends more on the information richness than on the number of cases. Yin (2003: 51-53) also opposes the idea of minimum number of cases, arguing that it depends on the complexity of the study, as well as the availability of resources. This research thus studies four communities considering that they have sufficient similarities and differences to permit us to compare and to contrast them, with the reasonable expectation of generating conclusions of interest to the academic community.

4.3. Methods

As clarified above, this research obtained its data through in-depth, semi-structured, individual interviews. This section explains in more detail how these interviews were conducted, as well as the theoretical framework that grounds the choices made. The subsections below explore:

Environmental-Education Network). Based on the pilot study, this research chose the four communities that were more active, and that had a more intense use of the Internet-mediated communication channels.

4.3.1 how the interviewees were selected;

4.3.2 the procedure for gaining informed consent before the interview;

4.3.3 the practical conditions for the conduct of the research (such as the period, the language and tape-recording processes);

4.4.4 the interview guide (themes to be discussed with the interviewees);

4.4.5 the processes of transcription and translation; and

4.4.6 the process of coding.

4.3.1. Selection of interviewees

This research selected the interviewees purposively, according to their characteristics, considering that members with varying group roles and experiences could help gaining an understanding of the phenomena in question from diverse perspectives (Mason, 2002: 124, 127; Morse, 1994: 229; Warren, 2002: 87; Miles and Huberman, 1994: 29; Bauer and Aarts, 2000: 19; Esterberg, 2002: 93). Specifically, this research has been concerned with selecting members who participate and who do not participate on the segregated decision-making processes. Thus members are classified in two categories: those that participate on the segregated discussion list (identified as management or leadership members); and those that participate only on the general list (identified as ordinary members).

The selection of interviewees was done through a snowball process. The investigation started with key informants, who indicated other people to be interviewed (Esterberg, 2002: 93; Warren, 2002: 87). The first contact with the communities was always with their spokespeople, as formalized on their websites (in general main leadership members). These contacts provided references to others from the two major groups, here identified as management members and ordinary members. This second set of members proposed further names and so on, summing up 58 members.

In spite of the efforts to diversify the types of respondents in relation to their position in the community, the majority of interviewees are from management groups. Other, ordinary members were contacted by email and telephone, but they did not agree to interviews. The final distribution of respondents is:

Table 8.4 – Types of respondents

Community	Distribution of interviewees
Rebea	8 management members; 8 ordinary members
Repea	8 management members*; 3 ordinary members
Remtea	11 management members; 4 ordinary members
Reasul	11 management members; 1 ordinary member 3 other members**

** One management member had joined the group recently before the interview.*
*** These three members theoretically belonged to the management group, but in practice they did not have experience in decision making, as they related in their interviews.*

As discussed in chapter 7, some dissimilarity among cases may be related to this uneven distribution between ordinary and management members. On these occasions, the degree to which the findings could be compromised by the skewed distribution of respondents is clarified. For instance, in relation to tactic 3C-1A (*do not inform ordinary members about the existence of a leadership group, and the segregation of discussion lists*), Remtea's management members may have hidden this practice on purpose (subsection 7.1.3), justifying the few citations[5] (both from ordinary members). Still, the interviews of these both ordinary members have permitted to grasp the tactic.

A second example is related to tactic 9C-2 (*reinforce respect for the role of executive secretary by blocking ordinary members from representing the community or taking decisions*), which is not cited by Reasul members. There are contextual reasons to explain this omission (see subsection 7.1.9), but it could also be related to the cited bias in the types of interviewees, although in this example Repea and Remtea related the practice in

[5] This dissertation does not make inferences from the number of citations, as explained in chapters 5 and 7. It is only when the contextual evidence may attribute meaning to the citations that the frequency is analysed. Here the ambiguity emerges from the fact that there are a greater number of management members among Remtea interviewees, which could have affected the obtained data.

spite of also having more management members among their interviewees. Thus it is not clear whether this data derives indeed from the fact that there are more management members among Reasul respondents, as there are other competing interpretations.

In general, the differences among cases appear to be related to other contextual aspects, as it is discussed in the next chapters. Indeed, the findings related to Rebea, which has an even balance between management and ordinary members, are very similar to the findings related to the other communities, with only three clear exceptions in relation to tactics of: *ignoring complaints against centralized structures, or questions related to accountability and transparency* (3C-2); *avoiding conflict with and criticisms of sponsors* (4C-2); and *excluding from debate within the management group those who do not agree with the leadership orientation* (4C-3). Although these tactics could have been more emphasised because the community has more ordinary members among respondents, in fact many management members are among those that cited these practices (see citations in subsections 7.1.3 and 7.1.4). This consistency between the findings of Rebea and the other communities suggests that the distribution of respondents is not a problem in this research.

Furthermore, there are political disputes among management members in all these communities. The management groups are not homogeneous in terms of individual interests or stances. Many management members were deeply critical about their governance models[6] and the influence of sponsors on their communities. These disputes, for instance, appear clearly when four Remtea leaders[7] criticizes the centralization of decision making in Rebea, although they accept the same structure in Remtea. In addition, management members have differing levels of power and legitimacy[8] inside

[6] As cited in subsection 7.1.3, in relation to tactic 3C-2, many management members disagree with the centralized decision-making structure in Rebea. Citations: Rebea01.08; Rebea06.16; Rebea07.15; Rebea14.17; Rebea16.06; Repea08.03; Remtea08.14; Remtea11.05/08; Reasul01.08; Reasul05.13.

[7] Citations: Remtea01.23; Remtea02.18; Remtea11.05/08; Remtea14.03. They are also Rebea members.

[8] It was not possible, however, to differentiate between management members with different degrees of power. The differentiation between management members and ordinary members is simple, based on who is on the segregated discussion lists. The same distinctions could not be made within the management

their community, as exemplified in the presentation of findings[9]. Divergences and disputes among management members may explain the fact that interviewees discussed communities' governance structures with a reasonable level of disclosure, also because some tactics are used against management members as well, if they do not comply with the prevalent power structures.

In sum, although including more ordinary members could have enriched the picture obtained, this research presents cohesive findings, within cases and cross-case analysis. As the tables in chapters 5 and 6 indicate, there is an impressive level of consistency among respondents who gave congruent interpretations, which is a criterion of reliability in qualitative research (Trauth, 1997: 242; Stake, 1994: 241; 2000: 443-444; Orum, Feagin and Sjoberg, 1991: 19; Patton, 2002: 556). Furthermore, the logical consistency between findings and theory support the significance of this study (Patton, 2002: 467; Eisenhardt, 1989: 548). Also, by regarding the findings related to Rebea as a good indicator of the variation between the interpretation of management and ordinary members, the consistency of findings among the other communities can be confirmed.

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group, because I did not have access to these lists and thus I could not observe who, in practice, makes decisions inside the management group.

[9] For instance, that Rebea's executive secretary negotiated with the federal government directly, without acknowledging other management members, the EA.Net (as discussed in subsection 6.1.4, in relation to argument 4B-1). Also one Reasul leadership member admits that in a specific project to obtain funding only a few management members were enrolled, as there was not enough money for rewarding the efforts of more members in this group (as discussed in subsection 6.1.4, in relation to tactic 4C-1A). Furthermore, the practice of consensus (see section 5.1 in relation to table 5Y; and tactics 3C-1B and 3C-1C in subsection 6.1.3) in these communities are centralized in a few management members, which implies that other management members are excluded similarly to the ordinary members, although the ordinary members also do not have access to the debates on the segregated discussion list. In addition, as discussed in carriers *objects meeting conventions and standards* (11A-1) (subsection 5.2.11), a few members in the management groups control in practice the publication on the websites and the discussion lists in the four communities. Consequently, management members may also be ostracized from decision making for other more powerful leaders. See for instance tactic 4C-3 (subsection 6.1.4), which is related to the fact that some management members have been excluded from the decision making without previous negotiation.

4.3.2. Informed consent

This thesis strictly conformed to the requirement that interviewees should be informed about the kind of research they are participating, and that the confidentiality of their answers was guaranteed, in order to protect informers from any kind of harm from participating in this study (Mason, 2002: 79-80; Stake, 1995: 57, 244; Fontana and Frey, 1994: 372; Warren, 2002: 88-89; Johnson, 2002: 115; Rubin and Rubin, 2005: 97-104, 112; Frankfort-Nachmias and Nachmias, 1992: 79-87; Miles and Huberman, 1994: 290-296; Babbie, 1998: 438-441; Kvale, 1996: 112-114).

Drawing upon these authors, in this research, each respondent received a document (*informed consent*[10]), introducing this researcher, explaining the objectives of the interview and describing how confidentiality of data was guaranteed. Consequently, this thesis does not reveal the names of the interviewees, nor any kind of data, even in the excerpts, that could identify the respondent to their peers. The consent document also stated that the interview would be voluntary (people were not pressured to participate), and that the interviewee could ask to stop the conversation at any time during the dialogue. In addition, the document indicated that the interview was tape-recorded, and that interviewees could demand the tape-recorder be turned off (as sometimes happened). All interviewees signed the informed consent document, authorizing the interview under these conditions, before starting answering the questions.

4.3.3. Practical conditions of the research

Data was collected between April and June 2006, through in-depth, semi-structured face-to-face individual interviews, at the place each respondent chose (for the most part, they preferred their workplaces, although some chose their homes or public places). As the

[10] The informed consent draws upon the formal LSE ethical procedures, and the cited authors who discuss ethical issues in social research. The proposed informed consent was approved by Professor Jannis Kallinikos (supervisor of this thesis).

interviewer is an outsider (not related to the studied communities, or to the field of environmental education), she was involved with the interviewees only by the reason of the present research, which preserves a level of distance from the empirical object (Walsham, 1995a: 77). All interviews have been conducted in Portuguese, the mother tongue of both the interviewer and the interviewees.

All interviews were tape-recorded, in order to permit a subsequent deeper analysis of data, respecting as far as possible the original words of the respondents (accuracy), following recommendation of scholars (Walsham, 1995a: 78; Esterberg, 2002: 106; May, 2001: 137-138; Warren, 2002: 91-92; Johnson, 2002: 111; Rubin and Rubin, 2005: 110). As noted above, at some points respondents asked for the tape-recorder to be turned off when discussing issues that they felt sensitive about. In general, after re-stating the confidentiality of the interviews, these respondents have agreed to the tape-recorder being turned on again. Although the informed consent document explicitly states the confidentiality of the interviews, some respondents preferred to reconfirm this condition before giving certain information.

On some occasions, I decided to turn the tape-recorder off, particularly when respondents started to talk about very personal issues that were not connected to the research. These digressions were a surprise because the research is about Internet-mediated communities but some interviewees felt comfortable enough to talk about their personal lives. In order to respect the privacy of the respondents either I turned the tape-recorder off (when I noted the kind of issue that was at stake), or I eliminated these parts from the transcripts.

Notes were taken during the interviews, in order to have a second source in case something went wrong with the tapes (Patton, 2002: 383; Johnson, 2002: 111; Rubin and Rubin, 2005: 110). On a few occasions the notes helped to clarify some parts of the tapes in which the words were not absolutely clear; furthermore, the notes substituted for a small segment of a tape that was lost due to a technical mistake. The great majority of all analysed data, nonetheless, comes from the tape-recorded material. This researcher has observed that some respondents feel uneasy about the tape-recorder, because they could

not feel confident that their confidentiality will be respected. This lack of confidence may have affected the results of this research, although in general, considering the sensitivity of the findings, most respondents appear to have overcome their initial barriers and trusted the researcher.

4.3.4. Interview guide

This research has elaborated an *interview guide*[11] (below), which is a set of themes to be developed during the interviews (Mason, 2002: 24, 62-66; Hakim, 2000: 35; Esterberg, 2002: 87; May, 2001: 123; Fontana and Frey, 1994: 366; Warren, 2002: 83). Unlike structured questions, the interview guide has the advantage of allowing enough flexibility to adjust the order and formulation of questions to the context (Gaskell, 2000: 40; Mason, 2002: 67; Esterberg, 2002: 94; Rubin and Rubin, 2005: 13-14, 135-136).

This format allows the researcher to explore the different paths respondents follow in their reasoning. This approach also permits interviewees to emphasise their own perspective, in their own terms, highlighting specific contexts and complexities that the researcher would not be able to access otherwise. In practice, the precise formulation of questions arose from the situation, based on the contents of previous answers but having the interview guide in mind.

The interview guide is grounded in the primary findings of the pilot study, the theoretical framework on new institutionalism, and the proposed research question. The interviews thus have developed the following five broad themes:

1. How members describe their communities in terms of being network organizations.
   The studied Internet-mediated communities call themselves networks, and state on their websites that they are network organizations. Also in the pilot study members reinforced this aspect as being part of their identity. Thus it is necessary

[11] The interview guide is also called *topic guide* by Gaskell (2000: 40).

to explore why they believe their communities are network organizations, in order to contrast this ideal model with their actual governance structures. As a general rule, the interviews started with this question. I thought it would be easier to investigate first the ideal model, as people could be less willing to talk about it after describing actual practices that are not consistent to the network organization.

2. How members perceive the actual governance structures of their communities, particularly in relation to their decision-making processes.
   Although these communities are informal (they do not have legal existence such as being an NGO) and interact mainly through the Internet, they have some offline activities, such as mobilizing efforts to influence public debates on policy and educational programmes. Thus they have some decision-making processes to enable them to organize their face-to-face and Internet-mediated activities. This theme has been discussed extensively with interviewees, in order to identify communities' governance structures. In other words, further details were asked in relation to their effective practices of governance, in order to map their procedures step by step, aiming to understand their effective social structures in their specific situation (thus exploring aspects of context as well).

3. How members explain the contrast between their ideals of creating network organizations and their actual governance practices[12].
   This point is sensitive, as it exposes the incoherence between the models (ideal versus actual). In the pilot study, for instance, members have justified their actual practices blaming: (i) the governmental rules to fund projects; (ii) the tradition (some members have more legitimacy than others to represent the communities, which creates an obstacle to the idea of equal membership); (iii) the need to keep control on misbehaviour (for instance, restricting the access for publishing on the community website); (iv) the limitations of the e-mail lists as tools for

[12] This theme was explored as far as the member confirms the existence of this contrast during the interview.

establishing network structures (although these limitations result more from the fact that they customize the tools in standardized ways than from the technical features inscribed in the tools); and (v) the need to keep some level of centralization in order to take decisions with necessary speed. Understanding how members justify the centralized governance structures in spite of their ideal model of structuring network organizations helps to investigate the institutional roots of their decision-making processes. This theme has to be explored in a diplomatic way in order to avoid discomfort and resistance, as some members could feel uneasy when questioned about the incoherence between their ideals and practices. Indeed, during the data collection, interviewees confirmed that this theme is very sensitive, although many members frankly talked about these contrasts.

4. How those members who recognize the discrepancies between their ideal model and their actual model of decision-making processes plan to bridge the gaps in order to construct a network model in the future.

   The difficulty in spelling out how to transform their ideals into actual models helps to investigate the cognitive force of institutionalised, hierarchical procedures, vis-à-vis the abstract conception of a network organization. These difficulties can also point out the strength of institutionalised procedures within Internet-mediated communities.

5. How the communities are associated with sponsoring organizations, such as government offices, universities and NGOs.

   The idea of creating such Internet-mediated communities for promoting environmental education originated in the Global Forum of NGOs in the United Nations Conference on Environment and Development in Rio de Janeiro (Brazil) in 1992 (as described in the chapter 1). The original concept was that these communities should be independent, informal, non-hierarchical collectivities, supported by voluntary, individual membership, rather than by formal organizations. In practice, nonetheless, as the pilot study has pointed out, some of these communities were not structured robustly enough to keep their

independence. Rather they linked themselves to formal sponsors, mainly universities and NGOs. At the beginning of the 2000s, the Brazilian federal government offered funding to help some of these Internet-mediated communities to organize themselves. The idea was to offer these communities the opportunity of creating their websites, purchasing their own computers and servers, and providing news services to members. It is thus useful to explore how these external formal organizations have influenced the internal governance structures of these communities.

During the interviews, I asked exhaustively details about the described processes, in order to reduce the risk of accepting taken-for-granted assumptions. For instance, when a member said "we decide in consensus", I explored how the consensus is formed from the moment one person gives the first suggestion, to the development of debates, and to the closing process. I explored ideas such as: who may give suggestions; who participates in the debate; who closes the debate; what is a legitimate consensus; who may change the consensus, or direct the consensus to other directions; and what happens when the consensus is not coherent with the leaders' proposals.

Another interesting example: I did not take for granted the meaning of the sentence "all members participated in this decision". Every single time that a member said this sentence, the meaning was the opposite: only few members participated in the decision. It became evident only because I asked them to clarify details such as: the names of 'all members' related to the decision; the names of those that had disagreed with the decision (and how the decision attend or not their demands); and the meaning behind the silence of members. In sum, in each situation I used a different tactic, depending on the presented arguments. The strategy behind the questions, nonetheless, was the same: to grasp the actual model of governance. When asked about details, in general, members came with the description of their actual procedures, making clear that the ideal model was an abstract schema that has not been implemented in practice.

Lastly, before starting the recorded interview, the researcher always engaged in an introductory, informal discussion with the respondent, in order to create a basis of trust between the parties (Johnson, 2002: 109; Rubin and Rubin, 2005: 92).

4.3.5. Transcriptions and translation

This research adopts a policy of partial transcription (non-verbatim ones) of the tape-recorded interviews, following orientation of Mason (2002: 78), Kvale (1996: 164-173), Poland (2002: 629-630), Bernard (2000: 206) and Esterberg (2002: 108). As proposed by the authors, this approach is adequate when the transcripts focus on the content of the interviews (what is said), rather than the ways respondents have articulate their reasoning (how it is said). In this direction, the parts of interviews that were not relevant to this research were omitted.

As elucidated by Flick (2002: 17, 171-172) and Kvale (1996: 164-165, 171), excess of exactitude is not necessary in sociological questions (although it is in linguistic and psychological analyses), thus the transcript should focus on the issues that help to address the research question. Also for this reason the verbal structure has been tidied up to omit the many utterances and digressions that really do not express ideas. In other words, in order to facilitate the reading and analysis of the contents and make meaning clearer, the sentences have been summarized, following the format of a written text, avoiding thus the usual informal mode and structure that is characteristic of speech, but without changing the meaning interviewees have expressed, as suggested by Rubin and Rubin (2005: 204), Flick (2002: 173), Poland (2002: 630-633) and Kvale (1996: 164-166, 170).

Finally, only few excerpts that are used as examples in the thesis are translated to English. The translation is not literal, but a summary of the meaning, as understood by the researcher, encapsulated in the sentences, in order to facilitate clarity. As explained in chapter 5, the presented citations are in indirect speech, as the use of quotations would not be adequate after these adaptations from oral to written discourse.

4.3.6. Coding

In this research, the process of coding was done manually (without software). The main concern with establishing the coding pattern was that only following key words (such as rules, legislation or role) would not uncover all the relevant data, because similar concepts are expressed in a great variety of ways. This research thus adopts an *interpretive coding processes* (Mason, 2002: 78; Rubin and Rubin, 2005: 217), which requires that sentences are read, and meaning attributed to them in accordance to the expression of ideas in the specific context of the objective of this research. In other words, the coding process respects the approach of exploring the common sense, inter-subjective meaning actors attribute to their social world, in order to preserve the validity of the findings (Berger and Luckmann, 1967 [1966]: 37-40; 69-72; Orlikowski and Baroudi, 1991: 13; Knorr-Cetina, 1981: 4, 9; Gadamer, 1989 [1975]: 267; Sayer, 2000: 46).

As suggested by Esterberg (2002: 158-159, 177), Charmaz (2002: 683-684), and May (2001: 138-139), this research draws upon some techniques prescribed by grounded theory[13]. Following these authors, this researcher started with an open code, identifying in the transcripts themes that would be relevant to this thesis, considering the research question and the theoretical framework. It implies that this research is not following a grounded theory approach (which would not be driven by prior theorisation), but only drawing upon some of its techniques.

In fact, any research starts from a theoretical standpoint and the researcher is not neutral in the construction of findings (Gadamer, 2003 [1960]: 159; 1989 [1975]: 302; Goodman, 1978: 2; Habermas, 1981 [1968]: 309; Schutz, 1990 [1962]: 5; Weber, 2003 [1904]: 118; Feyerabend, 1993: 211-212). Even grounded theory (Glaser and Strauss, 1967; Strauss and Corbin, 1990) starts from disciplinary assumptions or initial theoretical perspectives,

[13] Grounded theory has been proposed by Glaser and Strauss (1967). A further development may be found in Strauss and Corbin (1990).

which sensitize the data collection and the coding process (Vaughan, 1995 [1992]: 195; Charmaz, 2002: 683).

Indeed, the theorization of the studied phenomena emerged from my effort to match a theoretical framework with the empirical evidence (Flick, 2002: 177; Rubin and Rubin, 2005: 207-222). In this respect, the findings and analysis do not emerge from interviewees' interpretation of their world, but from the way I understood their interpretations through the theoretical lens of new institutionalism. Certainly, in many cases the link between data and the theoretical framework emerged easily. For instance, many respondents identified that Brazilian *legislation* (carrier *rule*) has influenced the governance structures of the studied communities straightforwardly. In other occasions, the identification of the carrier demanded more interpretation.

One example related to the carrier *hierarchical schema* may help to understand this process of interpreting data through the theoretical lens. In order to uncover meaning, I applied the principles of hermeneutics: throughout successive interpretations, the parts and the whole have been understood as a coherent body (hermeneutical circle). In this process, I identified the carrier in three discursive forms: the direct conceptualization of a hierarchical schema; the comparison of community governance structure with other hierarchical structures; and the taken-for-granted assumption that decision-making processes should be centralized. In more details:

i. First, some interviewees used the term hierarchical model to explain why their communities were reproducing this organizational form. For instance, the respondent Rebea03 said : "We live in a vertical social system, with hierarchies. When we propose a horizontal model, things do not work, because the social relations are vertical."

ii. Second, other respondents did not formulate concepts of models or schemas, but pondered that the communities mirror society. As Reasul01 formulated: "In

society, some people have power to give orders; and others should be wise to follow these orders."

iii. Third, other members implied the carrier hierarchical schema exactly because they could not think other alternatives. In these cases, the carrier is internalized thus it appeared nonsensical to question the functionality of the hierarchical organization. Repea04, for instance, said: "It is impossible to conduct a process totally horizontally because it is necessary to execute tasks, to contract people and to be transparent about expenses."

These three examples highlight the kind of effort that has been done to constructed a meaningful interpretation, through successive interactions with data, considering the theoretical lens. The three citations show how the very same carrier are embedded in different discourses, demanding an interpretative effort which also consider the context in which the interviewees were conducted. It is thus necessary to be aware that this process of interpretation brings a level of subjectivity which is inherent to qualitative research.

In order to reduce the impact of my biases in this research, I adopted two main procedures. The first procedure was during the interviews. No questions were directly about institutions or carriers. I always asked about description of processes, in the maximum detail. As the interviews averaged of two hours, I had time enough to explore the details which were used in the elaboration of the large number of carriers, arguments and tactics.

The second procedure was during the coding process, which had two distinct phases. The first coding was open (done between July and August 2006). The framework on carriers was at the back of my mind, but at the same time other findings emerged. Comparing the first findings with the theory, I tried to consolidate the code in terms of carriers. I realised then that many answers were about justifying their governance structures. Furthermore, I realised members related interesting forms of interaction that reproduce the segregation of decision making.

During this effort to match code and theory, I developed the idea of linking justifications (arguments) and procedures (tactics) to each carrier (explained in chapter 5). Thus after consolidating the code and having expanded the concept of category, it was necessary to return to the data to match the evidence with the categorization effectively. This process started in November 2006, after the consolidation of the first code.

In order to improve the quality of the findings, in addition to reading the full transcriptions, I adopted three other processes. Firstly, in exploring similarities between carriers, arguments and tactics (discussed in subsection 8.1.3), I re-analysed the statements related to similar issues to investigate whether they match other categories as well. Secondly, I explored key words to revisit themes that were related to the elements under scrutiny. A simple example is the carrier *legislation*[14], which was searched for by key words such as legislation, law, funding, government, project and sponsor. Thirdly, in the last phase, I cross-referenced the data using the tables as a guide, to verify whether I would still interpret the citations in the same way I did initially through the coding process.

This process of coding through revisiting the data many times has been useful. Firstly, it has created a kind of critical sense about the developed code. Some categories that emerged in the first code were consolidated or eliminated. The second coding was improved through the many comparisons with data. For instance, tactics 3C-1 and 5C-1 were divided into sub-tactics, providing a greater level of information.

Secondly, it creates a kind of proximity with the data, which gave me two strong impressions. Firstly, that the interviews had indeed achieved the level of theoretical saturation in relation to answering the research question (Mason, 2002: 134; Johnson, 2002: 113; Charmaz, 2002: 689; Flick, 2002: 64) (see subsection 4.4.1). Secondly, that the understanding of the parts was consistent with the interpretation of the whole. This

[14] The search for by key words in the transcribed data has used Portuguese words, as the original transcripts are in that language. The cited examples are in English to facilitate the understanding.

iterative process between the parts and the whole to construct a coherent meaning is recommended for qualitative studies (a hermeneutic circle) (Heidegger, 1962: 38; Gadamer, 1989 [1975]: 290-292; Giddens, 1995: 242; Bauman, 1978: 17, 168; Sayer, 2000: 17; Klein and Myers, 2001: 224).

This process of coding through phases in different periods is a way of improving reliability, in the sense that the same technique, applied on the same data, should have similar results (Babbie, 1998: 129; King, Keohane and Verba, 1994: 25; de Vaus, 2001: 29; Bernard, 2000: 47; Mason, 2002: 40). The ideal process would have been to contract a second coder to apply the final categorization in order to test the reliability of the findings through inter-coder agreement (Silverman, 2000: 9), but I did not have the resources for that. Thus the idea of coding in different periods, as well as cross-referencing the code from the tables to the original data has helped to reduce mistakes and omissions in this process.

4.4. Quality in qualitative research

This researcher has undertaken some measures in order to increase the quality of her analysis, recognizing that qualitative research demands specific processes unlike those used by quantitative investigations (Mason, 2002: 38-39). This researcher has attempted to understand the meaning interviewees give to the studied phenomena in order to reduce personal biases as much as possible, as well as to avoid leading the interviewees in their answers.

Theory-driven research may incur the risk of being less flexible in its possible interpretations, thus it is necessary to pay particular attention to emerging meanings, in order to be able to change preliminary frameworks when necessary, including being prepared to modify or reject the theory (Walsham, 1993: 7; 1995a: 76; Vaughan, 1995 [1992]: 195; May, 2001: 127; Fontana and Frey, 1994: 367; Rubin and Rubin, 2005: 32-37). Indeed, drawing upon Esterberg (2002: 8-9, 87), Ragin (1995 [1992]: 218), King,

Keohane and Verba (1994: 29) and Babbie (1998: 4, 60), this thesis contrasts its theoretical framework with the empirical evidence, thus interleaving both inductive and deductive reasoning, finally proposing some improvement to the adopted framework on institutional carriers (as discussed in the next chapters).

In a more systematic fashion, this research is concerned with reinforcing its *validity*, *reliability* and *generalizability*. Still, this research has some weaknesses that are important to acknowledge. These themes are detailed below.

4.4.1. Validity

Validity in this investigation is obtained through grounding the analytical arguments in appropriate evidence and elaborating arguments that are coherent and plausible in relation to the way data is linked to explanations and theory (logical consistency) (Chua, 1986: 614; Mitchell, 2000 [1983]: 183; Mason, 2002: 39; Numagami, 1998: 3; King, Keohane and Verba, 1994: 25; Babbie, 1998: 134, 136; Lincoln and Guba, 2000: 179; Kvale, 1996: 236; Miles and Huberman, 1994: 278-9; Yin, 2003: 36; de Vaus, 2001: 27-28, 30).

Furthermore, this research has interviewed an adequate number of subjects who have knowledge about the issues of concern, 58 (without considering the pilot study), and reached the *theoretical saturation*, understood as the point in which additional interviewees stop telling new things in relation to the research question (Mason, 2002: 134; Johnson, 2002: 113; Charmaz, 2002: 689; Flick, 2002: 64; Rubin and Rubin, 2005: 64, 67; Morse, 1994: 230; see also Glaser and Strauss, 1967, on theoretical saturation). Naturally, new things are always presented, but one cannot continue doing interviews indefinitely, thus the question is to balance the increasing costs involved in adding new interviewees and the decreasing volume of new data being obtained (Bauer and Aarts, 2000: 33-34; Eisenhardt, 1989: 545). Gaskell (2000: 43) argues explicitly that more interviews do not mean better understanding.

In adopting in-depth interviews as the data collection method, this research achieved a detailed level, affording a thick description of contexts (Hakim, 2000: 36; Gaskell, 2000: 42; Mason, 2002: 135-136). The selection of interviewees guaranteed access to a sufficient variety of stakeholders (leaders, ordinary members, more or less active members, younger and older members), reducing bias through the elaboration of diverse perspectives (Lincoln and Guba, 2000: 180-181; Stake, 1994: 241; Rubin and Rubin, 2005: 64, 67). The interviewees, nonetheless, are more from management groups in three communities (Repea, Remtea and Reasul). Only in Rebea they are equally divided (see the evaluation of this selection of interviewees in subsection 4.3.1).

In addition, this thesis has provided a certain level of confirmation (referred to as *triangulation*[15]) of interpretations within each case (comparing different interviewees), between cases (comparing the four studied communities) (Babbie, 1998: 133; Miles and Huberman, 1994: 278-9; Silverman, 2000: 177, 179; Vaughan, 1995 [1992]: 199; Orum, Feagin and Sjoberg, 1991: 19), and in relation to other academic studies (Esterberg, 2002: 176). As discussed in the following chapters, the presented interpretations emerge from a reasonable number of respondents; the findings have a high level of similarities between

15 This idea of triangulation is criticized by some authors, such as Walsham (2001: 7) (see also Stake, 1995: 108, 115). For Walsham, the interpretive approach accepts multiple perceptions, thus it does not make sense to triangulate to try to construct a true interpretation. On the one hand, I agree with Walsham that multiple interpretations are possible in social research, and that even one simple citation can add relevant information to our understanding, as far as it is inserted in the effort of making sense of the phenomenon as a whole. On the other hand, nonetheless, I am concerned to grasp the inter-subjective meaning respondents attribute to the observed phenomenon, as discussed in the current chapter. In this direction, confirming that an interpretation is shared by some members helped to construct my own understanding of the phenomenon. Thus the idea of triangulation in this research does not have a positivist approach. In other words, the confirmation helped both to understand the inter-subjective meaning, and to improve the quality of this investigation. This researcher, nonetheless, does not use the cited triangulation to claim either that her interpretation is the final truth about the phenomenon, or that there are not other possible interpretations of the studied phenomenon. Furthermore, this research does not claim judgmental relativism, as discussed in subsection 4.1.1. Thus in the process of selection of relevant interpretations, some aspects have been given more emphases, in accordance with the empirical evidence and the theoretical framework.

cases (and differences are contextualized); and conclusions are coherent with previous academic researches, which indicate the influence of institutions in virtual communities, and the theoretical framework.

This research also has not accepted any kind of information as self-evident or self-confirming, as respondents can, consciously or unconsciously, distort, fabricate or omit information (Rubin and Rubin, 2005: 73). Thus, ambiguities have been clarified, and cross-checked with other respondents (Rubin and Rubin, 2005: 73, 76; Mason, 2002: 25). Indeed, some community members have given information that systematically is not confirmed by peers, or even is contradicted by other members. In these few cases, the unreliable data has been discarded. As Gaskell (2000: 44) notes, a researcher should avoid invalid inferences based on omitted or distorted information.

4.4.2. Reliability

This research improves its reliability through three main procedures. First, it makes an effort to cross-check data (as discussed above in relation to validity and about the coding process in session 4.3.6), although different, but coherent, interpretations helped to understand the whole of the phenomenon through the investigation of anomalies and contradictions (Trauth, 1997: 242). Second, it chooses a data-collection method (in-depth, semi-structured individual interviews) that is consistent across settings, as well as coherent with the research design and the conceptual and theoretical frameworks (King, Keohane and Verba, 1994: 25; Miles and Huberman, 1994; 278).

Third, it records the procedures adopted in this study, from the formulation of the question to the coding processes and analysis, in order to permit the judgment of peers (providing accountability) (King, Keohane and Verba, 1994: 25-26; Yin, 2003: 38; Babbie, 1998: 134). In this research, the objective of providing accountability is not related to the idea of replication, common in quantitative research. Indeed, this study understands that in qualitative research the interaction between respondents and

researcher is inserted in particular situations that cannot be reproduced fully (Esterberg, 2002: 211; Walsham, 1993: 5; King, Keohane and Verba, 1994: 26; Numagami, 1998: 3). Another researcher would necessarily find different settings, also because the researcher is enrolled in creating the researched setting.

4.4.3. Generalizability

The generalization from qualitative research divides scholars between those who defend and those who deny this possibility (Hammersley and Gomm, 2000: 5). Although this debate on generalizability has many flavours that cannot be explored in this thesis, it is fruitful to highlight two aspects considered by this present investigation.

First, the viewpoint adopted here is that the meaning of generalization in qualitative research is different from the concept of statistical generalization in quantitative studies. In qualitative research, the goal is not to provide generalizations from settings to populations, but to use the understanding of a phenomenon to inform our investigation and knowledge about other settings (Orlikowski and Baroudi, 1991: 5; Ragin, 1995 [1992]: 42; Walton, 1995 [1992]: 125; Stake, 2000 [1978]: 22-25; 1995: 3-4; 1994: 243; Lincoln and Guba, 2000 [1979]: 39; Klein and Myers, 1999: 75).

Walsham (1995a: 75, 79) comments that the objective of qualitative research is not to generate truth or social laws, similar to quantitative research, but to understand the generative mechanisms of social phenomena as tendencies that can explain particular contextual situations. The author argues that case studies are valid not in statistical sense, but because of the plausibility of their logical reasoning (ibid: 15, 247).

In seeking to inform other researchers and settings, this thesis may aid the investigation of other similar social collectivities, such as informal virtual communities, which have both strong interaction with formal organizations and established decision-making processes. Moreover, the findings of the current research would aid in contrasting studies in relation to other social movements (such as the Indymedia) that, despite the complexity

of their activities, keep non-hierarchical decision-making processes (Pickard, 2006) (see discussion in subsection 8.4.1).

Second, qualitative case-studies permit some level of generalization from data to the development of theory and concepts, at the analytical level, without fostering ideas of predictions, and always respecting the limits of the context in which the research has been done (Lee and Baskerville, 2003: 236; Walsham, 1995a: 79-80; Klein and Myers, 1999: 72; de Vaus, 2001: 237; Orum, Feagin and Sjoberg, 1991: 13-15; Hamel, Dufour and Fortin, 1993: 39; Miles and Huberman, 1994: 28, 279; Kvale, 1996: 233).

Yin (2003: 10, 32-33) argues that case studies can be generalized to theoretical propositions (*analytic generalization*), rather than to populations (*statistic generalization*). A theory is applied and used as a template, permitting analysis of whether the cases under study support (replicate) the theory or not. This research develops the concepts of *arguments* and *tactics* (as discussed in chapters 5 and 6), and suggests a theoretical proposition of including these elements in the adopted framework on carriers (Scott, 2001) (see discussion on section 8.2), thus constructing an analytic generalization from the analysed empirical evidence.

4.4.4. Limitations in data collection methods

This empirical investigation adopted a series of measures to increase its quality, as discussed above. Still, there are always some aspects that could have been improved. Specifically, this research could not diversify data-collection methods, being focused only on the in-depth interviews as discussed previously. Two other possibilities have not been possible: analysing related documents; and observing the differences of interaction between the general and segregated Internet-mediated discussion lists, as explained below.

In the first case, the communities do not document their procedures and rules systematically. Their websites carry general statements in relation to their ideal model of

organizing but not the actual one. In the second case, the studied communities have two types of Internet discussion lists. One type is called general list, and it is open to all members. A second type is the segregated discussion list, accessible only to management members. The communities' leadership strata have not given me access to their segregated lists, or even to a copy of selected discussions. Thus this thesis is based exclusively in the in-depth interviews. The number of informants, nonetheless, is large enough to be confident about the quality of data, as discussed above.

Lastly, this research considered that surveys would not be useful to investigate the proposed phenomena, because of its complexity and the need to understand its contexts (Mason, 2002: 1, 3; Johnson, 2002: 105). See further discussion on the limitations of this research in section 8.3.

5. Findings and analysis I: Internet-mediated communities and institutional carriers

This research is concerned with understanding how institutional carriers influence the governance structures of Internet-mediated communities. Specifically, it questions the role of these carriers in fostering the segregation of decision-making processes, an instance of centralization similar to hierarchical organizations (Simon, 1997 [1945]), in communities which at least rhetorically aim to be non-hierarchical, network organizations. In order to develop this investigation, this research follows Scott's (2001) proposition of considering 12 categories of carriers, detailed in the table below (as presented in section 3.2.4).

Table 3.2 Institutional pillars and carriers

Carriers	Pillars		
	Regulative	**Normative**	**Cultural-cognitive**
Symbolic systems	Rules Laws	Values Expectations	Categories Typifications Schemas
Relational systems	Governance systems Power systems	Regimes Authority systems	Structural isomorphism Identities
Routines	Protocols Standard operating procedures	Jobs Roles Obedience to duty	Scripts
Artefacts	Objects complying with mandated specifications	Objects meeting conventions standards	Objects possessing symbolic value

Source: Scott (2001: 77)

Considering this framework, this chapter presents the first findings of this thesis, using the grid of 12 categories of carriers. The collected data (obtained between April and June 2006) for each case-study (four Brazilian environmental-education Internet-mediated communities identified by their acronyms Rebea, Repea, Remtea and Reasul) (see chapter 1) has been classified in accordance with this framework. Taking into account the

four case-studies, the empirical evidence indicates that the 12 categories of carriers have influenced the studied communities in diffusing segregated decision-making processes, although not all cited carriers, in the examples provided by Scott, have been observed[1].

Furthermore, the findings show that social actors have an active role in the diffusion of institutions. As presented below, carriers diffuse social structures, along their regulative, normative and cultural-cognitive pillars. Social actors, nonetheless, interpret the carriers in their own environment. Firstly, they try to make sense of the adopted social structures in relation to their contexts[2]. Secondly, they adapt their actions in accordance with their specific circumstances in order to reproduce the institutionalised social structures locally.

In other words, institutional carriers are important elements in the diffusion of social structures, but they need to be understood in the situation. The carriers diffuse institutions through time and space (Scott, 2001, 2003). It is through agency, nonetheless, that institutions are reproduced or changed. As proposed in Giddens's (1979, 1984) structuration theory, social structures only exist as the result of human agency (see discussion in the introduction of chapter 3). Thus on the one hand, carriers are the objectifications (Berger and Luckmann, 1967 [1966]) of social structures realised through legislation, conventions, schemas, roles, scripts and symbolic values (among other possibilities). On the other hand, social actors need to reproduce these social structures through their actions, which demand people make sense of the reproduction and adapt their actions to their situation in order to really permit the enactment of institutions.

This interaction between carriers and agency is presented in the next chapter. For each category of carrier, other two analytical constructs have been added: *arguments* and

[1] Following Scott's examples in the grid, the institutional carriers *rules*, *values*, *categories*, *typifications*, *regimes*, *structural isomorphism*, *protocols* and *obedience to duty* have not been observed in the present study. Still, the observed carriers are sufficient to represent the 12 categories.

[2] The concept of context in this thesis is used in a broad fashion, not only as geographically localized factors, but also as any other kind of influence which could be relevant from the viewpoint of actors, and which affect the situation through any kind of media, as suggested by Scott (2005: 474).

tactics[3]. The arguments are statements that social actors invoke in their discourse to justify the reproduction of segregated decision-making processes, which contrast to their idealized model of constructing network organizations. The tactics, complementarily, are how effectively agents act to reproduce the social structure in the situation (which may be in online or offline contexts).

Both constructs have been inspired by Barley and Tolbert (1997: 105), who recommend researchers on institutionalisation to consider how actors interpret their behaviour, and how they effectively establish patterns of interactions. This approach is coherent with Scott's framework on carriers. Indeed, Scott emphasises both procedures in the diffusion of social structures through institutional carriers: the suggestion of observing how actors decode (interpret) ideas, and negotiate activities in specific situations (2003: 884-885; 2005: 468).

This thesis claims that institutional carriers are important in the diffusion of segregated decision-making social structures among the studied Internet-mediated communities. However, it points out that social actors adapt their discourse and actions to make possible the reproduction of institutions in their situation, thus emphasising the relevance of agency in this process, drawing upon Giddens (1979, 1984). Chapters 5 and 6 present data supporting these claims.

In order to introduce the findings on institutional carriers, the first section below presents the contrast between how the studied communities (Rebea, Repea, Remtea and Reasul) idealize their organizational model and how they organize themselves in practice. As discussed in chapter 1, a pilot study revealed that the studied communities have an ideal of adopting a network-like form of organization, meaning mainly non-hierarchical social structures. In practice, nonetheless, the communities follow hierarchical models, at least in relation to their decision-making processes, which segregate the majority of members from these processes. As proposed by Simon (1997 [1945]), the centralization of decision

[3] Thus categories in this research include institutional carriers, arguments and tactics. In Scott's (2001) framework, categories are only related to institutional carriers.

making is characteristic of hierarchical organizations (see also Weber, 1922, cited in van Dijk, 1999: 93). Thus, in accordance with the pilot, there is a clear contrast between the ideal and the actual models of governance followed by these communities.

Indeed, the evidence presented below reinforces the findings of the pilot study. Community members hold two parallel perceptions of their governance structure. On the one hand they describe their model as being a network organization, in which members have the same right of participating in decision making (table 5X). On the other hand they describe their actual practice as having a level of centralization in decision-making processes (table 5Y). Furthermore, some members clearly understand that their communities live in this contradiction between the ideal and the actual models (table 5Z).

The next section presents the findings related to the 12 categories of institutional carriers. Then the third section summarizes the chapter, concluding that Scott's framework helps to understand the processes of institutionalisation in the studied communities, in relation to the diffusion of centralized decision-making social structures.

For the sake of simplicity in this thesis, the respondents will be identified by the name of their main community (Rebea, Repea, Remtea and Reasul), and numbering (which is used to offer anonymity to interviewees). In the citations, an extra number is added to identify the segment in which the related statement is cited. Thus Rebea01.05 means that the respondent identifies herself[4] mainly as a Rebea member (she is talking mainly, but not only, about Rebea, as interviewees are members of more than one community), that her number is 01 (thus this respondent is always identified in the thesis as being Rebea01), and that the exact part of her interview in which the data has been cited is the segment 05 (each interview has been divided in many segments).

When describing statements, this thesis uses indirect speech. This format is chosen because excerpts demanded a certain amount of editing, to eliminate digressions and meaningless sentences. Furthermore, to protect respondents' identities, some statements

[4] Gender has been kept in accordance with the respondent indeed.

could not be presented in their original forms. Thus if a respondent says "I have done X", the peers could identify the respondent through his or her work. Thus some adaptations have been made to keep the agreed confidentiality. In this example, the sentence would be changed to "the respondent says a member has done X". In this way, the action is considered in the findings, but the actor is presented as an observer of the action. These small changes do not alter the meaning or the results of this study, and permit the fulfilment of the ethical requirements of this thesis in relation to protecting the identity of respondents (as discussed in subsection 4.3.2). In addition, the translation of excerpts from Portuguese to English also implies a certain level of editing. Considering these restrictions, I chose to adopt indirect speech, thus avoiding quotations in constructions that the respondent did not utter in exactly the way they are presented.

Lastly, the number of citations in tables should be considered by their consistency, rather than by their frequency. Many authors argue that qualitative studies should be concerned with the consistency of the interpretations among respondents and also in relation to theory (Trauth, 1997: 242; Stake, 1994: 241; 2000: 443-444; Orum, Feagin and Sjoberg, 1991: 19; Patton, 2002: 467, 556; Eisenhardt, 1989: 548). Thus this research uses the citations to construct the elements of each category from the interpretation of the empirical evidence, drawing also upon the emphasis respondents give to their own interpretation. The constructions emerge from the contrast of empirical evidence and theory. There are thus interpretations which emerge from few citations (or even one citation), but still they are considered where the statements are consistent with the whole meaning which emerges from the data (the idea of the hermeneutical circle), as well as with the theoretical framework which supports this thesis (Walsham, 2001: 7; Mason, 2002: 39; Yin, 2003: 36; Babbie, 1998: 134; Gadamer, 1989 [1975]: 266-267, 290-292; see further discussion in subsections 4.1.1. and 4.4.1). This approach is coherent with the interpretive orientation of this research (as explained in chapter 4).

It is important to recall here that this investigation is qualitative, thus it does not aim to infer conclusions based on frequency of citations. It is only when the qualitative interpretation of evidence permits the speculation of meaning from the emphases

members attribute to a specific construct that such an association is made, always in hypothetical terms, as this thesis does not test such associations. This procedure becomes clearer in chapter 7, which draws upon the tables presented in chapters 5 and 6 to make the cross-case analysis. Furthermore, citations in footnotes provide more specific details about statements which are not supported straightforwardly by tables, thus they are not mere repetition.

5.1. Ideal versus actual models

This research's empirical data reinforces the pilot study's conclusions, that members of the four studied communities recognize both the ideal (network) and the actual (centralized) models of decision-making processes. Although community members claim that they respect the network-like form of organizing, in practice decisions are centralized in a leadership group, which assumes roles related to managing the collectivities.

As explained in chapter 4, I started interviews asking respondents about the reasons why they call their communities 'networks', exploring their ideal model of organizing. In the sequence, themes related to their actual governance models were explored. Before the data collection, I was concerned that respondents would avoid being inconsistent in their speech. My worries were that respondents would try to cover up the actual model of governance, making it as similar as possible to the ideal network model. Indeed, the opposite happened. Most respondents were spontaneous in their description of the actual model, either because they were not concerned with the inconsistency in relation to the ideal model, or because they tried to explain the gap between both models considering the circumstances. The arguments presented in chapter 6 derive from these attempts to justify the inconsistency between the ideal and actual models of governance.

The tables below introduce these three sets of data. The first table (5X) presents how members idealized their governance model as being a network organization. The second one (5Y) adds information about their actual model, which has segregated decision-making processes and related social structures. The third one (5Z) confirms that at least

some members are aware of the incoherence between the ideal and the actual models of organizing in these communities.

Table 5X – Characteristics of the idealized network model

Item	Rebea	Repea	Remtea	Reasul
1 –The community has non-hierarchical, decentralized decision-making structures (horizontality).	Rebea02.03 Rebea03.01/03 /18 Rebea04.01 Rebea06.04 Rebea09.02 Rebea10.03 Rebea12.02 Rebea14.01/05 Rebea17.01	Repea01.12 Repea04.01/05 Repea06.02 Repea07.01 Repea08.02 Repea09.01	Remtea01.01/12 Remtea02.01 Remtea04.04 Remtea06.14 Remtea08.01 Remtea11.02 Remtea13.02	Reasul01.01/21 Reasul04.06 Reasul05.02/04 Reasul07.06 Reasul09.19 Reasul12.02 Reasul14.03
2 – All members have the same rights and power, thus there is not subordination between members (equality).	Rebea01.01/04 Rebea02.07 Rebea03.12 Rebea04.03 Rebea06.04/13 Rebea17.01/02	Repea01.01/12 Repea03.02 Repea04.02 Repea05.01 Repea06.02 Repea07.01 Repea09.04 Repea11.09	Remtea01.01 Remtea04.04 Remtea06.25 Remtea09.04 Remtea10.04 Remtea10.18/26 Remtea11.01/02 Remtea13.02	Reasul01.02 Reasul02.08 Reasul04.13 Reasul05.04 Reasul07.13 Reasul11.11 Reasul12.07 Reasul14.03
3 – All members have the same right of communicating and expressing (freedom of speech, non-censorship).	Rebea01.02/03 Rebea03.12 Rebea06.04 Rebea06.26/28 Rebea14.01	Repea01.01/02 /10 Repea05.02 Repea09.02 Repea10.12	Remtea01.01 Remtea02.08/12 Remtea08.03/05 /11 Remtea12.02 Remtea13.05 Remtea14.03	Reasul02.08 Reasul03.08 Reasul07.06 Reasul08.09 Reasul10.16
4 – Decisions are taken by consensus, attending the different interests of members.	Rebea02.03 Rebea05.02 Rebea06.04/10 Rebea09.08/13 Rebea14.01 Rebea16.12	Repea03.05 Repea04.04 Repea05.01 Repea06.02 Repea07.10 Repea09.13	Remtea01.04 Remtea02.09/10 Remtea06.11 Remtea07.11 Remtea08.13 Remtea10.04 Remtea14.11 Remtea15.06	Reasul04.02/10 Reasul06.05 Reasul07.18 Reasul11.05/06 Reasul12.05
5 – The community has many leaders, and promotes the development of multi-leaderships.	Rebea01.27 Rebea02.07 Rebea10.11 Rebea13.06 Rebea13.16	Repea02.01 Repea04.01 Repea07.09 Repea08.02/23 Repea09.02/04 Repea10.06 Repea11.18	Remtea01.21 Remtea06.21 Remtea08.01/18 Remtea11.24	Reasul01.21

Table 5X indicates the criteria members use to define their communities as network organizations. As explained in chapter 1, the studied communities are named networks, arguing that they organize themselves as network organizations. In particular, attention is given to the fact that the communities are horizontal organizations, i.e. they do not have

hierarchical, centralized decision-making processes (item 1). Repeating the pilot study, some members also cited Martinho's book (2003) as a reference on how to organize their activities in non-hierarchical models[5].

Indeed, the second characteristic – that all members have the same rights and power within the community – is the expression of the first statement in other words[6]. Other characteristics are close to this meaning as well, such as the idea of having the same right of communicating and expressing (item 3), and having individuals' opinions taken into account in the formation of consensus (item 4).

The last characteristic of their communities as network organizations is more ambiguous. Members recognize that the community has many leaders, i.e. the network organization is not understood here as a collectivity without leadership, but as a space with multiple leaders. To a certain degree, this characteristic goes against the other concepts of equal membership. However, an important element of members' perceptions is that the community fosters participants to take initiatives, thus there is no such thing as a limited number of leaders, as they emerge in accordance to their activities and motivations. It is interesting to keep this ideal characteristic in mind when analysing tactic 4C-1 (chapter 6), which blocks ordinary members[7] from joining the management group, thus working against this idea of multi-leadership.

[5] Citations: Rebea01.29; Rebea03.18; Rebea05.16; Repea09.02/05; Reasul01.04; Reasul08.02.

[6] Table 5X preserves both characteristics distinctively in order to acknowledge how members emphasise different perspectives of the same horizontality.

[7] In this thesis, community members are classified in two groups: ordinary and management (or leadership) members. The ordinary members are those that only participate on the general, open discussion lists. The management members are those that belong to a leadership group, which has segregated discussion lists (i.e. lists that are not open to other members). In general, the so called moderators and facilitators are also members of the management group (at least in this investigation, all members in these roles also declared that they participate on the segregated discussion lists). Members who publish on the website are part of the management groups, at least at the time of this investigation.

Table 5Y – Characteristics of the actual organizational model

Item	Rebea	Repea	Remtea	Reasul
1 – Community has a leadership group*, which centralizes decision-making processes, and which organizes its discussions through a segregated discussion list. **Called either management group, or facilitation group, or moderation group.*	Rebea01.04/08 Rebea02.04 Rebea03.15/22 Rebea04.03/04 Rebea05.06 Rebea06.07/09 /16 Rebea07.07 Rebea08.02/10 Rebea09.15 Rebea13.08 Rebea14.02/18 Rebea16.05 Remtea11.04/08 Reasul01.08 Reasul05.03	Repea01.04 Repea02.02 Repea04.08 Repea05.01 Repea06.03 Repea07.01 Repea08.12 Repea09.06	Remtea01.04 Remtea02.01 Remtea04.04 Remtea06.20 Remtea07.15 Remtea08.01/12 Remtea10.11	Reasul01.15 Reasul02.03 Reasul03.02 Reasul05.02 Reasul07.13 Reasul09.09 Reasul10.17 Reasul11.02 Reasul12.02
2 – The leadership group decides which members represent the group in external events and courses.	Rebea01.23 Rebea02.07 Rebea03.19 Rebea05.06/12 Rebea07.03/09 Rebea10.08 Rebea14.16 Reasul01.08	Repea01.13/14 Repea03.02 Repea04.10 Repea05.01 Repea06.08 Repea07.07 Repea08.14 Repea10.04 Repea11.17	Remtea01.06 Remtea02.15 Remtea04.04/12 Remtea05.03/04 Remtea06.27 Remtea07.17 Remtea08.04/12 Remtea10.18 Remtea13.04 Remtea15.04	Reasul01.09 Reasul03.06 Reasul04.10 Reasul05.02 Reasul06.04 Reasul09.18 Reasul12.04
3 – Communities have moderators and facilitators (validated by the leadership group).	Rebea01.07/08 /14/21 Rebea02.04 Rebea03.15 Rebea05.01/12 Rebea06.03/28 Rebea07.04 Rebea08.10 Rebea09.16 Rebea10.04 Rebea14.21/22 Rebea16.05	Repea01.04/09 /13/21 Repea02.04/06 Repea03.01/02 /03 Repea04.02/05 Repea06.03 Repea08.04 Repea10.01 Repea11.01	Remtea02.04/10 Remtea03.03 Remtea04.03 Remtea06.01 Remtea07.15 Remtea08.04 Remtea10.08/19 Remtea13.04 Remtea14.07 Remtea15.04	Reasul01.14 Reasul02.04/06 Reasul07.04 Reasul13.01 Reasul14.03
4 – Leadership group controls website publications and communications.	Rebea01.20 Rebea02.06 Rebea05.09 Rebea08.02 Rebea14.22 Rebea16.05/18	Repea01.16/17 Repea02.06 Repea03.14 Repea04.14 Repea06.06 Repea07.08 Repea08.25 Repea11.13	Remtea01.20 Remtea02.26 Remtea13.14	Reasul01.10 Reasul02.15 Reasul04.05 Reasul09.05 Reasul10.18 Reasul12.03 Reasul13.01
5 – Decisions are not based on voting. The formation of consensus has specific meaning in the communities.	Rebea02.08/09 Rebea05.02 Rebea06.06 Rebea07.14 Rebea14.13	Repea04.11/12 Repea06.08	Remtea01.08/09 Remtea02.15 Remtea06.20/27 Remtea08.13 Remtea13.10 Remtea14.11	Reasul03.02 Reasul11.06 Reasul14.10

Table 5Y summarizes the main characteristics of the actual governance model of the studied Internet-mediated communities. The first characteristic, clearly recognized by members, is that the collectivities have leadership groups which centralize decision-making processes (item 1). This characteristic straightforwardly opposes the main structure of a network organization, as defined in table 5X by community members. The segregation of discussion lists (communities operate with two discussion lists, one for the management group and another for all members) also clearly denies the principles of a network organization (again taking into account how interviewees understand such a model). In general, the segregated discussion lists are recognized as important channels for decision making, although in Rebea, Repea and Remtea some decisions are discussed on the general list. This does not happen in Reasul, as ordinary members only receive a news bulletin through the general discussion list, and their contributions are always mediated by a moderator (these findings will be explained further in this and sequential chapters).

This form of segregating decisions is reinforced by other characteristics. For instance, the leadership group chooses which members can represent the community to outsiders (item 2). Usually, the executive secretary, or someone close to the core leadership group, represents the community. The leadership group also chooses moderators and facilitators for discussion lists, which are the main communication channel of these communities (item 3). Moderators enforce netiquette, such as keeping discussion lists focused on a range of themes, and inhibiting offensive opinions and spam. Facilitators are more engaged in promoting debate and distributing news. Both moderators and facilitators tend to be members of the leadership group (participating also on segregated discussion lists), with different rights and obligations in relation to ordinary members[8]. Furthermore, the leadership group controls the website contents through restricting the distribution of passwords for publishing (item 4).

[8] In the four studied communities, moderators and facilitators are members of the management group, although it could be otherwise, as there is no necessary link between the moderation of a general list and the participation on another segregated list.

The last characteristic in table 5Y is that decisions in general are not based on voting, but on what they call the formation of consensus. Independent of being decided on the general or segregated list, some members relate that communities do not count votes to make a decision. In these communities, the formation of consensus is a process in which a member makes a proposition, and then other members agree or disagree, suggesting alternatives. The last alternative is considered a consensus at the moment that other members accept it or stop fighting against it.

An interesting aspect here is the role of leadership members, who usually interpret the consensus for the community. In general, the consensus does not emerge unaided, but through the intervention of leadership members, in such a way that they are in fact the spokespeople for the community as a whole (see tactics 3C-1B and 3C-1C in subsection 6.1.3 for more details). This characteristic implies that the so called consensus may reflect the interests of the majority, or the interests of a noisy small group, or the interests of the leadership member who assumes the role of spokesperson in a specific debate. In any situation, the mediation of consensus formation gives leadership members more power to frame the decisions.

Table 5Z – Identification of conflict between the ideal and the actual models

Item	Rebea	Repea	Remtea	Reasul
Member recognizes the incoherence between community's ideal and actual models of governance.	Rebea01.04/10 Rebea02.07/10 Rebea03.01 Rebea06.16 Rebea10.03/09 Rebea17.01 Remtea11.08/19	Repea02.16 Repea08.12/18 Repea04.22	Remtea01.05 Remtea02.22 Remtea04.04 Remtea08.14 Remtea11.05/19	Reasul01.08 Reasul03.02 Reasul05.02 Reasul07.13 Reasul09.19 Reasul10.22

Table 5Z confirms that respondents identify the incoherence between the ideal and the actual governance models, specifically in relation to the centralization of decision-making processes.

Starting from these contrasting tables, this research investigates then how institutional carriers influence the studied communities in the reproduction of segregated decision-making social structures. The findings are presented in the next section.

5.2. Carriers of segregated decision-making processes

Starting from the discussed difference between the ideal and actual models (tables 5X and 5Y), this section explores in detail the role of institutional carriers[9] in the diffusion of segregated decision-making processes, an instance of centralization associated with hierarchical structures (Simon, 1997 [1945]), which oppose the ideal model of network structures.

Some clarifications are needed here in relation to the code used in this thesis to refer to carriers, arguments and tactics. Firstly, grounded in Scott's (2001) framework, this study has 12 categories, constituted of 12 types of carriers (identified by codes from 1A to 12A), which are associated with 12 types of arguments (identified by codes from 1B to 12B) and 12 types of tactics (identified by codes from 1C to 12C).

It happens that in many of these 12 categories there are more than one carrier, or one argument or one tactic, which are identified separately by additional numbers. Thus for instance, in the category *normative symbolic systems* (subsection 5.2.2), the general code for the related carrier is 2A. There are, nonetheless, two carriers in this category, which are identified then as 2A-1 (*societal expectations*) and 2A-2 (*members' expectations*). The very same logic is used in chapter 6 in the identification of arguments and tactics.

Even in the categories where there is only one carrier, the code respects the same logic. In the category *regulative symbolic systems*, for instance, the only carrier is the *legislation*, coded as 1A-1. Furthermore, in some circumstances a specific tactic is split in other

[9] The definition of institutional carriers is presented in section 1.3 (Chapter 1), and subsections 3.2.3 and 3.2.4 (chapter 3).

associated tactics, in order to provide further level of information. Tactic 3C-1 (*make governance rules blurred and ambiguous*) (subsection 6.1.3), for instance, is compounded by tactics 3C-1A, 3C-1B, 3C-1C and 3C-1D. In this situation, tactic 3C-1 should be understood as a group of associated tactics.

5.2.1. Regulative symbolic systems

Table 5.1

Carriers	Rebea	Repea	Remtea	Reasul
1A-1 **Legislation** In order to obtain government funding, the community should be represented by a formal (anchor) organization.	Rebea01.05/11/13 Rebea02.05 Rebea05.15/16 Rebea13.01/12 Rebea14.06/08/09 Rebea16.03/04 Remtea11.06/11	Repea01.03/04 Repea02.01/04 Repea03.01 Repea04.08/09 Repea06.04 Repea08.03/11 Repea09.06/10 Repea11.02/07	(*)	Reasul01.01/04 Reasul02.07/18 Reasul03.07 Reasul07.12 Reasul09.01/09 Reasul10.06

(*) Remtea has not received government funding directly as the other three communities.

Brazilian *legislation*[10] has permitted the studied Internet-mediated communities to receive government funding, where these informal collectivities are represented by formal (called *anchor*) organizations, which are legally accountable for executing the respective contract (each project has one anchor organization and other five formal associated organizations).

The government funding is related to specific projects. Thus members of these formal organizations, which represent the communities in these funded projects, acquire differentiated rights (as they receive the money and have legal power to decide about the projects) and obligations (as they need to guarantee that resources have been used correctly) in relation to other members as a result of this legislation (which is enforced by coercive mechanisms such as the legal contract and sanctions).

[10] Specifically a special funding provided by the FNMA – Fundo Nacional do Meio Ambiente, in the beginning of 2000s.

Legally, these differentiated rights and obligations are related exclusively to the specific projects, thus the legislation does not interfere in the community governance structures as a whole. Furthermore, the legislation demands that some members become accountable for specific projects, but it does not interfere directly in how the community makes its decisions, either in relation to the funded projects or in relation to other decisions. Members of the anchor organizations, nonetheless, argue that horizontal decision making would leave them unable to fulfil the contracts with the government, considering targets, deadlines and bureaucratic procedures related to accounting[11].

Therefore, the legislation carries centralized decision-making processes, as the anchor organization is subjected to coercive mechanisms which do not affect all members. As summarized by Repea09.10, the legislation reinforces the power of centralized structures rather than empowering the roots of these communities.

Furthermore, it is important to point out that the legislation applies to these communities as far as they have demanded government funding. Thus the influence of this carrier is also the outcome of agency, as the legislation is not imposed, but voluntarily accepted at least by the anchor organization and the other associated ones[12]. Remtea, interestingly, is not affected by this carrier, as this community has not received direct government funding.

[11] Citations: Repea01.04; Repea04.08/09; Remtea11.06; Reasul01.04; Reasul09.09.

[12] The available data does not permit a conclusion on the level of involvement of members in general in the development of the funded projects. Thus the anchor and the associated organizations certainly were involved in the projects (their representatives had to sign up a contract with the government), but other members may have been excluded from this process.

5.2.2. Normative symbolic systems

Table 5.2

Carriers	Rebea	Repea	Remtea	Reasul
2A-1 **Societal expectations** Society expects that the community should be represented by members who have formal roles (such as executive secretary).	Rebea01.05/06 /24 Rebea05.06 Rebea06.05 Rebea07.07/09 Rebea09.03/13 Rebea14.16 Rebea16.21 Remtea01.24 Remtea07.17 Remtea11.19	Repea01.15/21 Repea02.15 Repea04.10 Repea06.08 Repea07.08 Repea08.14 Repea11.12	Remtea01.33 Remtea02.05 Remtea07.17/18 Remtea10.02 Remtea10.18 Remtea14.01/02	Reasul01.21 Reasul03.06 Reasul07.20 Reasul13.11/12
2A-2 **Members' expectations** Members assume that the leadership group should represent the community, take initiatives and manage conflicts.[13]	Rebea01.04/05 Rebea03.22/23 Rebea05.01/02 Rebea06.27 Rebea08.02 Rebea09.02 Rebea10.14 Rebea14.20 Rebea11.09 Remtea11.20	Repea02.06/13 Repea03.02/03 /12 Repea04.13 Repea06.08 Repea07.06 Repea10.02/09 Repea11.17	Remtea01.05/10 Remtea02.10/12 Remtea04.02/03/12 Remtea06.1020 Remtea07.06/15 Remtea08.01/02/12 Remtea10.08/20 Remtea13.04/08 Remtea14.07 Remtea15.04	Reasul01.05 Reasul02/06 Reasul03.03/06 Reasul04.07/12 Reasul07.01/05 Reasul09.09/20 Reasul10.02 Reasul12.02/09

Considering the available data, there are two carriers in the category *normative symbolic systems*, both related to *expectations*, which favour the idea of fostering some kind of hierarchical differentiation between members. Ordinary members lose degrees of freedom in decision making where other members have formal roles as representatives, moderators and facilitators, as these last members have attributions (rights and liabilities) that others do not have. In other words, members who have formal roles become the spokespeople and gatekeepers of the community, acquiring status of legitimate authority, as long as specific attributions are in place (and they are, as discussed in subsection 6.1.2).

[13] It is important to highlight that this expectation is not unanimous in the communities. Indeed, some members argue that the community cannot be represented and that the community should not aim to have political demands to discuss with government offices and society (citations: Rebea02.04; Rebea06.13; Rebea09.02; Rebea10.08; Rebea13.06; Rebea16.21; Repea01.14; Repea06.03). The objective of this research, nonetheless, is to point out the carriers which favour the centralization of decision-making processes. In this direction, the carrier 2A-2 is very pervasive and effective, as indeed the communities conform to these expectations, although they are not unanimous among all members.

Firstly, society as a whole (such as government representatives, journalists, companies and citizens) expects that the community should have formal representatives (for instance, an executive secretary), an address, a telephone and a formal website, in order to establish interaction (2A-1). The community could lose legitimacy if such a formal interface is not clear. As summarized by Rebea01.06, people do not agree to interact with a community which does not have some formality, such as an executive secretary. Remtea01.33 adds that organizations always send invitations to specific members or to the executive secretary, rather than keeping them open to any community member who could represent the community.

Secondly, members themselves, in spite of their discourse favouring a network organization, expect someone to assume more responsibility, manage community issues (such as conflict among members) and take initiatives (2A-2). Respondents Rebea01.04, Reasul01.05 and Reasul04.12 describe a general expectation that others would make decisions and take initiatives in the name of the community. As explained by Reasul02.06, in a culture which cultivates passivity, it is necessary to have leaders to push the community forward. Furthermore, some members take it for granted that it is necessary to have moderators to control conflict in communities (Rebea05.01/02; Repea02.06; Reasul07.05).

5.2.3. Cultural-cognitive symbolic systems

Table 5.3

Carriers	Rebea	Repea	Remtea	Reasul
3A-1 Hierarchical schemas People copy the hierarchical model they are used to.	Rebea01.01/04/22/26 Rebea02.08 Rebea03.20 Rebea09.01/11/13 Rebea10.03/14 Rebea13.09 Rebea14.03/14 Rebea17.10 Remtea11.03/08 Reasul05.06	Repea01.05/16 Repea02.13/14/18 Repea04.08 Repea05.04 Repea06.13 Repea07.03 Repea09.10 Repea10.02 Repea11.02/20	Remtea01.05 Remtea02.01/23 Remtea04.04 Remtea06.20 Remtea07.15 Remtea08.04/08/09 Remtea10.11/18	Reasul01.05 Reasul02.06 Reasul03.02/07 Reasul04.07 Reasul05.02/15/16 Reasul07.13/15 Reasul09.02/05/11/20 Reasul11.05 Reasul15.06

In order to organize their processes, the communities invoke hierarchical, traditional organizational models, here understood at the cultural-cognitive level. The community enacts structures that allow certain members (management group) to have more decision-making power in relation to others. *Hierarchical schemas* (carrier 3A-1) appear mainly as a taken-for-granted perception of how things should be done – despite members arguing that they are trying to construct network organizations, and despite the opposition of many members against the prevalent power structures[14].

As explained by Rebea01.01, the libertarian possibilities of networks attract the social movements, but the organizational models in society are pyramidal, thus members keep their vertical models as they do not know how to work horizontally. Rebea03.20 exemplifies this arguing that all social relations are hierarchical, with people who decide and people who obey, thus it is not simple to implement a horizontal model in such a society. Reasul05.15/16 goes in the same direction, alleging that if there are two people together, one is the boss. All these perceptions undermine the idea of constructing a network organization.

The term *hierarchical schema* is used in this thesis with this circumscribed meaning of having members with different degrees of power in decision making. This is the meaning that emerges from the interviews. Naturally, the term hierarchy evokes many other concepts that are not explored in this thesis. This is firstly because it is not the objective of this study, and secondly because the respondents focus on this interpretation when contrasting the term with network models.

[14] Many respondents identify that some members do not feel it is legitimate that leaders have more power than others in decision-making processes. Citations referring to Rebea: Rebea01.08; Rebea06.16; Rebea07.15; Rebea14.17; Rebea16.06; Repea08.03; Remtea08.14; Remtea11.05/08; Reasul01.08; Reasul05.13. Citations referring to Repea: Repea08.17/18; Repea09.12. Citations referring to Remtea: Remtea08.15. Citations referring to Reasul: Reasul09.10; Reasul10.17.

5.2.4. Regulative relational systems

Table 5.4

Carriers	Rebea	Repea	Remtea	Reasul
4A-1 **Power systems – the influence of sponsors** Sponsors (or potential sponsors) – such as the government, universities and NGOs – influence community social structures through funding projects, events and meetings. Members related to these power systems have more central positions in the decision-making processes.	Rebea01.10/11/12 /13/14/16/18/19 Rebea02.03/05 /06/13/14 Rebea03.03/19 Rebea04.02/04/08 Rebea05.09/10/11 Rebea06.18 Rebea07.18 Rebea08.03/04/05 Rebea13.03/05 /09/11/12 Rebea14.02/03 /07/08/12/14 Rebea16.01/19 Rebea17.06/09 Repea06.10 Remtea01.30 Remtea11.03/14 Reasul05.06 Reasul10.12 Reasul14.08	Repea01.13/15 /18/23/24/26 Repea02.12/15 /23 Repea04.10/14 /15/18 Repea06.10/11 Repea08.06/09 /10/26 Repea09.06/07 Repea10.04/06 Repea11.01/02 /11/15	Remtea01.01/19 /20/29/30 Remtea02.0716 /21 Remtea04.02/10 /11 Remtea05.04 Remtea06.02/06 /07/28 Remtea07.01 Remtea08.07/08 /14/17 Remtea09.04 Remtea10.06/18 /23/24/25/26 Remtea11.14 Remtea11.22	Reasul01.03/26 Reasul02.18 Reasul05.07 Reasul07.10/12 /18 Reasul09.13 Reasul10.03 Reasul14.08
4A-2 **Governance systems** The community imitates the sponsor's governance system.	[not cited]	[not cited]	Remtea01.20 Remtea02.21 Remtea04.02/04 Remtea06.02 Remtea08.07/17 Remtea10.06/24 /25 Remtea11.22 Remtea13.03	[not cited]

The carrier *power systems*, related to *the influence of sponsors* (4A-1), is one of the most powerful examples of how social structures are diffused through the studied communities. As summarized by Rebea14.07/08/12 and Repea11.15, the leaders in the communities represent the powerful people in society: those who have power in universities, government and NGOs, and can obtain resources for the community. Furthermore, through members who are related to power systems, effective or potential sponsors influence the communities by giving preference to some representatives and

excluding others from the debate (Rebea01.10) (a situation that is discussed in the carrier *authority systems* 5A-2).

Interviewees stressed that sponsors influence the communities throughout different channels, including also the simple possibility of offering future benefits. For instance, the sponsor may fund the community directly. As discussed in the carrier *legislation* (1A-1), three of the studied communities have been funded by the government. These contracts with the government impose obligations, which have affected members in their common activities, as well as their perception of legitimate authority. Also in the case of Remtea, which is supported mainly by an academic research group (GPEA/UFMT[15]), members of the management group link their activities with the research project, in such a way that power in the university is translated into power in the community[16].

A second channel of influence, according to a number of respondents, is through indirect benefits. More specifically, the government has contracted some community leaders as consultants, as well as published their academic work[17]. Furthermore, the government has invited communities' leaders to participate in specific government projects[18]. For these interviewees, through these benefits, the government has extended its influence over the communities, with the help of their leaders, even though the money does not go directly to the community.

The second carrier in this category is related to *governance systems* (4A-2). In this investigation, it occurs clearly in Remtea, because the boundaries between the community and the main sponsor are not clear. In this community, the majority of its leadership members are also members of a research group (GPEA/UFMT). In the interviews, it

[15] Grupo Pesquisador em Educação Ambiental, Universidade Federal de Mato Grosso.

[16] Citations: Remtea01.20; Remtea02.21; Remtea04.02; Remtea06.02; Remtea08.07/17; Remtea10.06/25.

[17] Citations: Rebea01.14/16; Rebea07.18; Repea01.24; Repea02.23; Repea04.15; Remtea04.11.

[18] Citations: Rebea01.10/19; Rebea03.03; Rebea08.04; Rebea17.09; Repea01.13/18/23; Repea02.15; Repea04.14/18; Repea06.10/11; Repea08.06/10; Repea11.11; Remtea01.30; Remtea04.10; Remtea08.14; Remtea10.06/25; Remtea11.14; Reasul05.07; Reasul07.18; Reasul10.03.

emerges that members do not differentiate clearly between Remtea's activities and their research project, thus the same governance structure is copied straightforwardly from the research group to the community.

5.2.5. Normative relational systems

Table 5.5

Carriers	Rebea	Repea	Remtea	Reasul
5A-1 **Authority systems – status** Reputation and legitimacy in society have being transformed into legitimate power within the community.	Rebea01.04/16 /18 Rebea02.11/16 Rebea03.03 /10/11/12 Rebea05.04 Rebea06.27 Rebea08.17 Rebea13.01 Rebea13.17/19 Rebea14.02 /04/07/08/18 Rebea17.08 Repea02.21	Repea02.15 Repea03.12 Repea07.05/07 Repea08.03 Repea08.06 /09/26/30 Repea09.09 Repea10.12 Repea11.17/19	Remtea01.04/05 /06/15 Remtea02.02 /07/24 Remtea04.01 /02/04/05/06 Remtea06.15/20 Remtea10.05/26 Remtea11.22 Remtea13.07 Remtea14.02	Reasul02.09 Reasul05.07/08 /11 Reasul06.01 Reasul07.02/03 /07/17 Reasul10.05 Reasul15.04
5A-2 **Authority systems – government influence** The government influences the legitimacy of members, in recognizing publicly some as community representatives.	Rebea01.10 Rebea08.04 Rebea14.10 Repea01.27 Remtea11.15 Reasul10.12	Repea01.25/27 Repea04.10/14 /15/17 Repea06.08 Repea07.07 Rebea08.11/14 /17/26	Remtea02.02/05 Remtea04.10/11 /12 Remtea07.04 Remtea08.02/14 Remtea10.02/18 Remtea11.15	Reasul01.07/24 Reasul12.04 Reasul13.06

The carrier *authority systems* related to *status* (5A-1) is cited many times by members of the four communities, confirming that reputation in society, such as being government officials, NGO leaders and academics, is translated into more legitimacy to make decisions in the studied collectivities. As summarized by Remtea04.04/05/06, people who have high status in a private company or in the university have more authority in the community. The power is implicit because members know each other in the community, continues the respondent (members are not anonymous). Also Rebea01.04 confirms that in the community respect comes from reputation and from what people know. For some

respondents, this explains why the academics are those who participate most in the communities (Rebea13.17/19; Rebea14.02; Rebea17.08).

The carrier *authority systems* related to *government influence* in the perception of legitimacy in the community (5A-2) is also identified by the four communities. This influence can be positive or negative. On the one hand, when the government publishes research, it is a form of legitimating the researcher (Repea04.15). On the other hand, when the government stops inviting a member to formal meetings, it undermines his or her legitimacy in the communities, affecting community power structures (Repea01.27).

5.2.6. Cultural-cognitive relational systems

Table 5.6

Carriers	Rebea	Repea	Remtea	Reasul
6A-1 **Identities** Community leaders share similar identity (history, values, and ideas) with other leaders in society, mainly in the government (A) and universities (B).	**A** Rebea01.20 Rebea02.12/13 Rebea04.02/08 Rebea16.20/21/22 Remtea01.30 Reasul14.01 **B** Rebea02.03 Rebea03.04/09 Rebea07.10 Rebea17.08 Repea02.22 Reasul14.11	Repea01.23 Repea08.07 Repea02.16	Remtea01.22 Remtea07.21 Remtea08.21 Remtea02.16 Remtea03.04 Remtea04.06 Remtea06.06 Remtea07.01 Remtea08.02 Remtea10.06 Remtea13.01 Remtea15.01	Reasul05.07 Reasul12.17 Reasul13.09 Reasul05.09 Reasul06.02 Reasul07.02 Reasul09.06 Reasul10.05 Reasul14.11

The carrier *identities* (6A-1) reinforces the links between community leadership and other leaderships in the government and university, thus leveraging the influence of *power systems* (4A-1) and *authority systems* (5A-1 and 5A-2). In cultivating a common identity

among the main leaders, other members are excluded from the group and consequently from decision making[19].

In these communities, many leadership members are also associated with the political party[20] which is in power in the federal government. For some members this association affects the independence of the communities. The argument is that members do not want to oppose the government, as the boundaries between civil society and the government are not clear (Rebea02.12/13). Also for Rebea16.20/21/22, the identification between the government and Rebea leaders is such that it is difficult to differentiate the government from the social movement. The main argument is that the same peers with whom Rebea leaders have worked in the social movement are now members of the government. Thus it is difficult to distinguish between who represents the government and who represents social movements in terms of identity.

5.2.7. Regulative routines

Table 5.7

Carriers	Rebea	Repea	Remtea	Reasul
7A-1 **Standard operating procedures** The management group segregates decision-making processes, excluding ordinary members.	Rebea01.04/08 Rebea02.04 Rebea03.22 Rebea04.03 Rebea05.06 Rebea06.07/09 Rebea07.07 Rebea08.02 Rebea13.08 Rebea14.02/18 Rebea16.05 Remtea11.08 Reasul01.08	Repea01.04 Repea02.02 Repea03.10 Repea04.08 Repea05.03 Repea06.06 Repea07.02 Repea08.12 Repea09.06 Repea10.04 Repea11.04	Remtea01.04/09/10 Remtea02.01 /04/06/10/19 Remtea04.08 Remtea06.01/20 Remtea07.15 Remtea08.01/04 Remtea10.11/14	Reasul01.01 Reasul02.03 Reasul03.02 Reasul04.08 Reasul05.02 Reasul07.13 Reasul08.07 Reasul09.09 Reasul10.07 Reasul12.04/12

[19] This exclusion does not affect only ordinary members. Within the management group, members have different levels of power, forming tiers (situation that is discussed in many examples through this thesis). The carrier identity thus also reinforces the stratification of members within the management group.

[20] Partido dos Trabalhadores.

The carrier *standard operating procedures* (7A-1), in this thesis, is related to the segregation of decision making by management groups. Although the communities state their aim of organizing themselves as networks, in practice they are influenced by centralized decision-making processes, which characterize hierarchical organizations (Simon, 1997 [1945]). This carrier thus is very close to *hierarchical schemas* (carrier 3A-1). There the model emphasises the differentiation between leaders (who decide) and ordinary members (who do not). Here the routine stresses the segregation of decisions, i.e. the fact that some are not allowed to join in the making of decisions. These communities reproduce this carrier when they enact structures which permit leadership groups (also called management groups, moderation groups and facilitating groups) to centralize decisions (see explanation on tactics 7C-1, 7C-2 and 7C-3, in subsection 6.1.7).

5.2.8. Normative routines

Table 5.8

Carriers	Rebea	Repea	Remtea	Reasul
8A-1 **Jobs and roles** Formal jobs and roles in society influence the way members behave in the community.	Rebea01.01/26 Rebea02.12 Rebea03.25 Rebea13.02 /04/05 Remtea11.10	Repea01.02 /03/23/24/26 Repea02.16 /20 Repea11.21	Remtea02.21 Remtea04.01/02 Remtea07.10/20 Remtea08.15 Remtea11.10 Remtea12.03	Reasul07.05 /10 Reasul13.07 Reasul14.12

The carriers *jobs and roles* (8A-1) imply that people behave in the community in a way that is compatible with their formal links in society. This is a quite obvious behaviour, as these communities are not anonymous, and indeed many members share with other the same face-to-face environment, as in their work and activities in general. These carriers favour the centralization of decisions as members avoid opposing their bosses or academic supervisors (or potential future bosses or academic supervisors). Thus some members, even if they do not agree with the segregation of decision making in the communities, avoid disputing this aspect with the people that have power over them in their jobs and in their relations in society.

5.2.9. Cultural-cognitive routines

Table 5.9

Carriers	Rebea	Repea	Remtea	Reasul
9A-1 **Scripts** Titles such as executive secretary, coordinator, moderator and facilitator influence how members understand the role of those who occupy these positions, and the role of others in relation to the former ones.	Rebea01.04 /05/06/24 Rebea03.19/22 Rebea05.01/12 Rebea06.03/05 Rebea07.07/09/17 Rebea08.02 Rebea10.10 Rebea11.11/12/13 /14 Rebea14.16/22/23 Rebea16.12 Remtea11.20	Repea01.12 /13/17 Repea02.04 Repea03.06 Repea04.13 Repea05.05 Repea06.07 /08/09 Repea07.03/04 Repea08.04 /09/11/14 Repea09.06 Repea10.02/09 Repea11.03	Remtea01.09 Remtea02.12/15 Remtea03.03/06 Remtea04.07 Remtea06.10/11 Remtea07.15 Remtea08.05 Remtea10.03/08 Remtea13.04/08 Remtea14.03/07	Reasul01.26 Reasul02.12 Reasul07.01 Reasul08.06 Reasul09.05 Reasul010.10 Reasul11.11 Reasul12.09 Reasul13.01 /02/05/11 Reasul14.04

The carrier *scripts* (9A-1) appears many times in the interviews. Members take it for granted that titles, such as executive secretary, coordinator, moderator and facilitator, should mean something which differentiates these members from others without titles. Thus *scripts* also influence the community in order to create different categories of membership, reinforcing the legitimation of segregated decision-making processes.

Members also associate activities with these *scripts*, not necessarily because they have been informed about them beforehand, but because they have a previous understanding on the meaning of these words in society. The title 'executive secretary', for instance, is associated with ideas of representing the community, elaborating projects, controlling the website and solving conflicts. And 'moderators' are linked with the idea of solving conflicts and enforcing netiquette, such as preserving the norm of keeping the discussion focused on certain themes.

An ordinary member in Rebea, for instance, remembers when she had the first formal contact with the community. On this occasion, a Rebea representative introduced herself as 'the executive secretary'. In the interpretation of this ordinary member (Rebea11.11/12/13/14), when a person introduces herself by the formal role, it means that

this person has powers that others do not have, and that the opinion of an executive secretary should be respected. Indeed, Rebea11 immediately followed the orientation of the executive secretary in relation to a community activity, understanding that this would be the correct thing to do. Rebea11 admits to having feared to disobey the given orientation, because at that time she did not know the formal structures of the community to understand which kind of power was associated with the title 'executive secretary'. Thus the respondent assumed an attitude of subordination to the orientation basically because of the referred title 'executive secretary'.

5.2.10. Regulative artefacts

Before advancing in the analysis of the last three carriers, it is necessary to make a clarification. This thesis adopts the three following perspectives to analyse artefacts as carriers. When the discussion is strictly related to the artefact itself and the embedded functionalities (technical features), it is considered a *regulative artefact*, i.e. an artefact that has specifications (10A-1). Although these specifications have not been imposed by law necessarily, in practice it does not matter, because the functionalities are available as they are, and not otherwise. From the point of view of a user, the embedded specifications operate as a taken-for-granted constraint (Doherty, Coombs and Loan-Clarke, 2006; Kallinikos, 2002: 287-289; Souza *et al.*, 2004).

When considering a regulative artefact, this thesis is concerned with how the chosen Internet tool (websites and discussion lists) carries structures which favour the centralization of decision-making processes. The fact that other tools which could foster more horizontal relations have not been chosen reinforces the role of chosen artefacts as carriers of centralized structures.

A second distinction occurs when the discussion focuses on the standardized way the selected tools are customized (11A-1). The analysed tools (websites and discussion lists) have embedded specifications, which permit a level of flexibility in their appropriation

(Orlikowski, 2000; Walsham, 2001: 44). Thus the way these tools are customized by communities is strongly related to standardised, social conventions. They could be appropriated in different ways, within the range of specifications, but they are customized in specific ways, following the institutionalised perception of adequateness (Kallinikos, 2002: 290; De Cindio, Gentile and Redolfi, 2003: 398; Orlikowski and Barley, 2001: 149, 154).

When the discussion focuses on standardized ways of customizing the tool, this thesis considers the tool a *normative artefact*. When focusing on this aspect, this investigation explores how the standardized, conventional way of customizing[21] the Internet tools has favoured centralized decision-making processes in these communities. When analysing artefacts from the normative viewpoint, the ways the tools are not customized also insights into the kind of social structures that have been fostered.

The differences between these two approaches – regulative and normative – are subtle and sometimes blur, as many people are not able to differentiate the standardized way of customizing from the technical functionalities themselves. A simple example may help. On the discussion lists, the tool gives different power to different membership roles: a moderator, for instance, has powers that an ordinary member does not have. The decision to inscribe the name of a member as a moderator or an ordinary member, nonetheless, is not in the tool, but in the way the tool is customized. The same tool could give equal power to all members: all can be classified as moderators. Thus the decision on classifying members in the discussion list is related to customization, rather than to a technical feature imposed by the tool.

[21] The customization should not be confounded with the way people use the tool in practice, as suggested by Orlikowski (2000). To be sure, one aspect is the technical features which are embedded in the tool; a second aspect is how those with power over the tools customize these functionalities; and a third aspect is what social structures people effectively enact in use, in the situation. In this chapter, the focus is on carriers of social structures. The aspect of how members use artefacts (technology) in practice are related to agency, as discussed in tactics 6.1.10 and 6.1.11.

The third distinction is related to the idea that the artefact has symbolic value. In this case the tools are considered by the value people attribute to them, rather than by their restrictive functionalities or by the way people customize them effectively. When the Internet tool analysed in this thesis carries these values, it is considered a *cultural-cognitive artefact*. When the focus is on symbolic values, this research is concerned with how these values, attributed to the artefact, favour centralized social structures as well. Other values associated to Internet tools are not explored in this thesis.

The current subsection presents the discussion on *regulative artefacts*. The next two subsections discuss *normative artefacts* (5.2.11) and *cultural-cognitive artefacts* (5.2.12) respectively.

Table 5.10

Carriers	Rebea	Repea	Remtea	Reasul
10A-1 **Objects complying with specifications** Web-tools such as websites and discussion lists have technical features, which permit some members to appropriate the control of these channels.	Rebea01.20/21 /22 Rebea03.24 Rebea05.01 Rebea14.22/23 /24 Rebea16.18	Repea01.09/16 Repea02.06/07 Repea03.02/07 /14 Repea04.19 Repea07.08 Repea08.12/25 Repea11.10/13	Remtea01.10/20 Remtea02.26 Remtea04.03/14 Remtea10.03/16 Remtea13.14	Reasul01.09/10 Reasul02.10/15 Reasul04.05 Reasul05.02 Reasul08.05 Reasul09.05 Reasul10.18

In the studied communities, two artefacts meet the condition to be considered institutional carriers of segregated decision-making processes. The carriers *objects complying with specifications* (10A-1) are websites and discussion lists. First, the website tools are protected by passwords. Only members who have the passwords can publish on the website, thus permitting a level of centralization in decision-making processes related to the website contents.

Second, the groupware tools give special powers to who creates discussion lists. The creator can extinguish the list, include and exclude members and moderate messages, as well as delegate these powers to other members. The creator and his or her delegates have

more power in relation to other members, thus also permitting segregation of decision making.

5.2.11. Normative artefacts

Table 5.11

Carriers	Rebea	Repea	Remtea	Reasul
11A-1 **Objects meeting conventions and standards** Internet tools such as websites and discussion lists are customized in such a standardized way in order to keep the control of these channels with leadership groups.	Rebea01.20 /21/22 Rebea03.24 Rebea14.23 Rebea16.18	Repea01.09/16 Repea02.06 /07/09 Repea03.02 /07/14 Repea04.19 Repea07.08 Repea09.12 Rebea11.13	Remtea01.10/20 Remtea02.26 Remtea04.03/14 Remtea10.02/16 Remtea13.14	Reasul01.09/10 Reasul02.01/15 Reasul04.05 Reasul05.02 Reasul08.05 Reasul09.02/05 Reasul10.18 Reasul13.01 Reasul14.03

The carriers *objects meeting conventions and standards* (11A-1) are related to the way the communities customize the adopted Internet tools. Actually, the leadership groups control the publishing on the websites (through passwords), and have the last word in relation to the discussion lists, through their power of moderation, as well as by the creation of a segregated discussion list which is not open to all members.

More specifically, the websites have passwords, and the leadership groups control the content. Three processes are associated with this centralization of decision making in the studied communities. First, the four communities centralize the publishing to leadership members (only a few members from management groups publish, which excludes ordinary members as well as other management members). Second, in the case of Repea, only the main leadership members (related to the anchor organization) can validate the content suggested by other management members. In other words, Repea's management members can publish, but the referred content only becomes available on the website after approval of the main leadership. Third, in Reasul one main leader has kept the power of moderation, thus this person can exclude content that other leadership members have included.

In relation to the discussion lists, they have moderators with differentiated powers in relation to other members. In general, the activities of these moderators are associated with keeping the netiquette (such as avoiding impolite behaviour) and solving conflicts (see more details in subsections 5.2.2. and 5.2.9). Moderators, nonetheless, also have special power to moderate messages (a member can be filtered independently of others) or even exclude people from the lists, independently of the opinion of other members.

As discussed in tactic 6C-4 (subsection 6.1.6), Remtea leadership group expelled a member without consulting ordinary members. This centralized decision is only possible because of the way the tools are customized by the leadership. Also moderators are gatekeepers of segregated discussion lists, guaranteeing that only members approved by the leadership members have access to these closed lists. The general lists also demand the approval of a moderator, but in general any non-anonymous person can join the discussion (it is only necessary to give minimal data about who is applying for membership).

Here the main aspect is that tools permit a certain level of flexibility that has been customized in ways of reinforcing the segregation in decision-making processes. Thus leadership members configure Internet tools in a standardized, conventional way (considering the hierarchical models of keeping centralized structures of decision making), which keeps the control of these tools in their hands.

5.2.12. Cultural-cognitive artefacts

Table 5.12

Carriers	Rebea	Repea	Remtea	Reasul
12A-1 **Objects possessing symbolic value** In communication, Internet tools are less efficient than face-to-face interaction.	Rebea03.02/13 Rebea06.01 /02/03/18/19 Rebea07.24 Rebea08.05 Rebea13.05/18 Rebea16.04	Repea01.11/22 Repea02.04/05 /19 Repea04.03 Repea06.01 Repea08.12	Remtea01.08/17/25 Remtea02.11 Remtea04.06 Remtea05.02 Remtea07.16 Remtea08.06 Remtea10.15 Remtea13.12	Reasul01.18/27 Reasul02.20 Reasul03.05 Reasul04.03/11 Reasul06.04 Reasul08.02 Reasul09.17 Reasul10.15/21/24

The four studied communities have cultivated the understanding that, in communication processes, Internet tools are less efficient than face-to-face interaction, especially when it is necessary to discuss themes deeply. In the adopted framework, this belief is associated with the *objects possessing symbolic value* (carrier 12A-1). The formulation of this symbolic value is quite intriguing, as in these communities the most important communication channels, considering the volume of exchanges, are through Internet tools (even in Remtea, whose management group is clustered in the same university)[22].

Indeed, some respondents cite this belief when they are trying to undermine the general discussion list as a space for decision making, or the ordinary members of the general list as authentic members[23]. Rebea06.18 (one of the main leaders), for instance, admits that the exclusion of ordinary members from decision making through the segregated discussion lists should be discussed, but feels that this debate should be in a face-to-face meeting open to all members. The respondent admits, however, that it is not possible to have such a meeting, because the community cannot sponsor all members to attend the event. In sum, the requirement of having a face-to-face meeting to discuss governance structures becomes in practice an obstacle to changing the segregation of decision making. Another interesting formulation comes from Remtea01.08/17, that the general discussion list is not a space to make decisions, because the virtual interaction hides human values such as the smile and affection.

The same value has not been associated by respondents with the segregated discussion lists. In other words, respondents feel that Internet tools are less efficient than face-to-face communication either generically (mainly talking about the relevance of keeping offline meetings) or in relation to the general list. In the interviews, the same association has not been made when discussing the segregated lists, which are normally used for decision making. The fact that respondents also associated the Internet tools with very

[22] Citations: Rebea06.02; Rebea08.05; Rebea13.05; Repea02.05; Repea06.01; Remtea01.25; Remtea10.15; Reasul01.27; Reasul10.24.

[23] Citations: Rebea07.24; Repea02.04/19; Remtea01.08; Remtea02.11; Remtea08.06; Reasul01.18; Reasul06.04.

positive values for the communities – such as the community development, the possibility of sharing information and the strength to promote political mobilization[24] – reinforces the interpretation that undermining the relevance of the discussion list as a channel for communication could be more a matter of rhetoric than a matter of fact.

It is necessary to add two comments to the previous evaluation. First, this research is not questioning that members prefer to make decisions in face-to-face meetings. What is being questioned here is that, in spite of this statement, the decisions have been made through both, face-to-face meetings and Internet-mediated interactions, mainly through segregated discussion lists. As the symbolic value developed here does not imply that the segregated lists have lost their relevance in decision-making processes (see references in tables 5X and 6.14), necessarily there is an element of rhetoric in repeating this belief. Second, this symbolic value is powerful independently of being rhetorical, as far as members believe in such a value and act in accordance with it, undermining the general discussion list as a space for decision making.

5.3. Concluding remarks on findings I

This chapter opens by contrasting the differences between how members of Internet-mediated communities, which aim to construct a network-like organization, idealize their governance structures (referred to in this thesis as their 'ideal' model), with how they describe their effective governance practices ('actual' model). More specifically, this study is interested in contrasting the features of both models in relation to their processes of decision-making, as discussed in chapter 1.

[24] Citations: Rebea02.02; Rebea06.01/16; Rebea07.10; Rebea08.05; Rebea09.07; Rebea10.01; Rebea11.02/08; Rebea12.02; Rebea13.05/11/12; Rebea16.03/10; Rebea17.02/07; Repea01.03; Repea06.02; Repea08.26; Repea09.05; Remtea03.02; Remtea08.06; Remtea10.02/15/17; Remtea11.04/17; Reasul01.28; Reasul02.10; Reasul10.24.

Focusing on this aspect, table 5X indicates that community members idealize having decentralized decision-making structures (also described as non-hierarchical and horizontal), in which members are not subordinated to each other. Respondents make such claims when questioned about why they call their communities 'networks'. Sequentially, members were asked to describe their decision-making processes in greater detail, through counting cases and experiences. Tables 5Y and 5Z emerged from these statements, which make clear that the communities have leadership groups (called management groups) that centralize decision-making processes. Furthermore, interviewees indicate that the main communication channels between leadership members are segregated Internet discussion lists, which are closed to ordinary members, who only have access to debates on general discussion lists.

Starting from this gap between the ideal and the actual models, section 5.2 describes how institutional carriers influence the process of diffusion of centralized, segregated decision-making processes, a common feature of hierarchical organizations, in communities which are informal (thus not subject to the same rules of formal organizations, such as corporations, governments, churches, schools etc.), and which aim at least rhetorically to construct a network form of social arrangement. As explained in chapter 1, for these communities, which have strong roots in social and environment movements, it is important to construct social structures which challenge the traditional, hierarchical models in society. They, nonetheless, reproduce the social structures that they are meant to be rejecting.

In order to investigate the diffusion of institutions through the studied communities, this thesis has chosen Scott's (2001) framework, which includes 12 different categories of carriers (symbolic systems, relational systems, routines and artefacts), in their regulative, normative and cultural-cognitive aspects (see subsection 3.2.4 for full description of Scott's framework). The broad coverage of this framework has demonstrated its value in helping to understand the complexity of the studied phenomena.

Indeed, the collected data shows that the 12 categories of carriers are related to the process of institutionalisation of segregated decision-making structures in the studied communities. Naturally, it could be otherwise. For instance, the carrier *legislation* (1A-1) (in the category regulative symbolic systems) does not apply for Remtea, as the community has not contracted government funding for its activities. On the other hand, the carrier *governance systems* (4A-2) (in the category regulative relational systems) only applies to Remtea, as its structure is mingled with an academic research group. Thus the presence of carriers depends on the kind of phenomena which have been investigated. In this sense, this study is particularly favoured by having found such complex Internet-mediated communities, which have permitted the exploration of all the 12 categories.

The next chapter presents the additional set of analytical constructs, referred to, in this thesis, *arguments* and *tactics*, to understand the diffusion of centralized decision-making structures through institutional carriers. It seems clear that the carriers have a great deal of influence in this institutionalisation of hierarchical processes, but it is necessary to go a step further to understand the associated role of social actors in this diffusion.

6. Findings and analysis II: Logics of justification and action

The empirical findings presented in chapter 5 suggested that the diffusion of segregated decision-making processes in a group of four Internet-mediated communities (Rebea, Repea, Remtea and Reasul) has been influenced by institutional carriers. In this chapter complementary findings are set forth. Drawing upon Scott's (2001) framework of institutional carriers, and Giddens's (1979, 1984) structuration theory, this thesis suggests paying special attention to how actors reproduce and change social structures in their situations, emphasising the relevance of agency in the process of institutionalisation. This research also draws upon Barley and Tolbert (1997), who propose combining new institutionalism with structuration theory, and investigating the diffusion of social structures through analysing actors' patterns of interaction, and interpretation of their behaviour. The focus on interpretation and interaction is supported by Scott (2003, 2005).

In this direction, this study argues that the influence of carriers is supported by the fact that members cultivate *arguments* to justify the reproduction of the related social structures in their Internet-mediated interactions. In this study, these arguments are especially relevant considering the contrast between how these communities imagine their governance structures and how they actually develop them. The discourse thus helps to gloss the differences and paradoxes between both ideal and actual models of decision-making processes.

Furthermore, this research argues that the influence of carriers depends on how people adapt their action to reproduce the social structures in the situation. In this study, these actions are called *tactics*: procedures which aim to permit the reproduction of institutionalised social structures in the context. In relation to how tactics are understood in this thesis, it is necessary to make two observations, as follow.

Firstly, this study is concerned with the role of carriers in the diffusion of a particular institutionalised structure defined as segregation of decision-making processes. Thus only

the tactics which foster this diffusion are focused on. It may happen that communities have other tactics working against the segregation of decision making. However if such counter-tactics are present, they have not successfully impeded the observed institutionalisation. Furthermore, it may be that the management group has been efficient in constructing counter-counter-tactics. For instance, respondents related that certain members keep criticizing the centralization of governance in the communities, but the management group ignores such complaints (tactic 3C-2). In Remtea, a member systematically criticized the mainstream ideology, but he was expelled from the community by the management group (tactic 6C-4). Thus the prevalent tactics are those that support the actual governance structures, which are reflected in the tables below.

Secondly, this thesis is aware that the term tactic may imply the idea of planning for promoting a desired result. Indeed, it is not possible to affirm whether the identified tactics have been created consciously with the interpreted intention of supporting the diffusion of the related social structures. Thus this research is describing a picture, considered at the moment of data collection, from a particular standpoint of finding situated actions which support the reproduction of the carried social structures in the studied contexts. These patterned actions may have been created in a more complex environment, in which many factors have been considered, rather than only the idea of supporting the segregation of decision making. Indeed the term tactic is used in this investigation as a hindsight analysis of a given situation, and does not intend to convey the idea of consciously planned action.

The first section below presents the arguments and tactics related to each category of carriers. As the carriers in each category are very close in their nature, the arguments and tactics are related to the category as a whole. The second section summarizes the main findings of this chapter, preparing the analysis and discussion that follows in the next chapters.

6.1. Reproducing institutions in the situation: Arguments and tactics

The subsections below present the arguments and tactics related to each category, following Scott's (2001) framework. The carriers discussed in chapter 5 are again listed here, in order to facilitate the reading, in the introduction of each topic. The arguments and tactics listed in this section are constructions based on the collected data, in order to convey the meaning respondents embed in their statements about their reasoning and practices.

6.1.1. Regulative symbolic systems

Three communities (Rebea, Repea and Reasul) demonstrate the influence of the *legislation* (carrier 1A-1). Although these communities are informal collectivities (thus they are not subject to laws in general), Brazilian legislation influenced the communities because it permitted them to obtain government funding[1]. The condition to access this resource, however, was that the community should be represented by a formal (anchor) organization (furthermore having other associated organizations which support the project), for the elaboration and execution of specific projects. The legislation differentiated between community members from the moment it gave the anchor organization special rights and obligations. Nonetheless, the legislation imposed rules on project outcomes, rather than on the governance structures of the communities or the projects.

Table 6.1

Arguments	Rebea	Repea	Remtea	Reasul
1B-1 The community needs to comply with legislation to receive government funding.	Rebea01.13 Rebea05.15/16 Rebea14.06/08 /09 Remtea11.11	Repea01.04 Repea02.04/14 Repea03.15 Repea04.08/13 Repea08.04 Repea11.07	(*)	Reasul01.04 Reasul02.18 Reasul03.07 Reasul09.09 Reasul10.06 Reasul12.16

(*) Remtea has not received government funding directly as the other three communities.

[1] At the time of the interviews, the government funding was no longer available.

Argument 1B-1, *the community needs to comply with legislation to receive government funding*, is based on the awareness that the community cannot be eligible for money without the support of an anchor organization. The problem is that these communities are informal collectivities, thus they do not have either legal status or bank accounts to receive public resources (Rebea05.15; Rebea14.06/09). Indeed the community could receive funding through its individual members, but respondents report that sponsors have resisted funding individuals. Thus communities use this alternative channel, of having an anchor organization to interface formally with sponsors.

Table 6.2

Tactics	Rebea	Repea	Remtea	Reasul
1C-1 Make the community's governance structure similar to the governance structure of the funded project.	Rebea01.04/05 /13/17 Rebea02.07 Rebea03.16 Rebea05.15 Remtea11.06	Repea01.0407 Repea02.01/03/05/11 Repea03.02/09 Repea04.14 Repea06.04 Repea08.03/11/26 Repea09.06 Repea11.02/07	(*)	Reasul01.04 Reasul03.07 Reasul09.02/03 /04 Reasul10.06
1C-2 Concentrate power and visibility in the anchor organization (and its representatives).	Rebea01.13 Rebea02.05/07/16 Rebea14.06	Repea01.03/05/13/14 Repea02.05/11/12 Repea03.02 Repea04.08 Repea05.03 Repea06.04 Repea07.04 Repea08.03 Repea10.06 Repea11.10	(*)	Reasul01.01/04 Reasul02.01 Reasul03.07 Reasul04.06 Reasul05.02/15/16 Reasul07.12 Reasul08.05 Reasul09.09 Reasul10.23 Reasul11.05 Reasul12.09

(*) Remtea has not received government funding directly as the other three communities.

Tactic 1C-1, *make the community's governance structure similar to the governance structure of the funded project*, is the outcome of agency, not an imposition of legislation. As related by Reasul01.04, on many occasions the leadership group blended the management of the community with the management of the funded project, because the anchor organization would not have been able to fulfil contractual targets and deadlines if they had tried to develop different structures. Naturally the rules are blurred, and some members do not understand the difference between the governance structures of the

funded project and of the community. This tactic thus favours the centralization of decisions – not only the ones related to the funded projects – in the anchor organization.

In relation to tactic 1C-2, *concentrate power and visibility in the anchor organization*, the fact that an anchor organization is responsible for a funded project does not imply that other members could not have a say in decision making. The legislation did not impose centralized decision-making structures *per se*. There is thus agency behind this procedure of centralizing decisions in the anchor and associated organizations, which also have members in the main community roles (such as the executive secretary or the coordinator).

As explained by Rebea01.05, a leadership member, the community created the role of executive secretary only after asking government funding. Previously, Rebea only had executive secretaries to organize face-to-face events (every two years), rather than to manage the community as a whole in a continuous fashion. Also in Repea, the differentiation between members (called nodes), with the related segregation of discussion lists, was only established because of the legislation during the funded project (Repea01.04; Repea02.01/03).

It is interesting that in Rebea and Repea the same structure is kept even after the end of the funded projects. The communities, at the time of the data collection (April and June 2006), were no longer receiving government funding related to this legislation. Conversely, Reasul05.15/16 and Reasul07.12 conclude that their community (which was created with this specific government funding) started to move to a more horizontal structure after the end of the funded project.

6.1.2. Normative symbolic systems

The four communities are influenced by two carriers in the category of normative symbolic systems. First, the one related to *societal expectations* (2A-1), as the government, organizations and citizens expect that the community should be represented

by members who have formal roles (such as an executive secretary). Second, the one related to *members' expectations* (2A-2), as some suppose leaders should represent the community, take initiatives and manage conflicts.

Table 6.3

Arguments	Rebea	Repea	Remtea	Reasul
2B-1 The community should have a formal, legitimate interface with society, in order to voice its political demands.	Rebea01.10 Rebea05.06/10 /12 Rebea06.05 Rebea07.07/09 /20/21 Rebea09.03/13 Rebea13.13 Rebea14.17/18 Remtea01.32	Repea01.18/21 /23 Repea02.15 Repea03.12 Repea04.09/10 /14/23 Repea06.08/11 Repea08.10 Repea11.12/16	Remtea01.06/30 Remtea02.03/05 Remtea04.11/12 /13 Remtea07.0406 /10/15/17 Remtea08.02/07 /18/20 Remtea10.02/06 /18/23 Remtea14.01/02	Reasul01.21/23 Reasul04.10 Reasul07.18/20 Reasul08.05 Reasul12.04 Reasul13.02/06 /11 Reasul15.05
2B-2 It is necessary to have a group to resolve conflicts and reduce opportunistic behaviour among members.	Rebea01.05/22 Rebea05.01 Rebea08.01 Rebea10.14 Rebea14.21/22	Repea02.06 Repea03.02/03 Repea06.09 Repea10.02/09	Remtea01.10 Remtea02.12 Remtea04.03 Remtea06.10/20 Remtea08.12 Remtea10.08 Remtea13.04/08 Remtea14.07	Reasul07.01/05 Reasul13.05
2B-3 It is necessary to have a group which takes initiatives, such as organizing meetings and events.	Rebea01.04 Rebea02.10 Rebea08.01/02 /09 Rebea09.10 Rebea12.06	Repea01.15/21 Repea02.17 Repea06.02 Repea11.02	Remtea01.04/05 Remtea02.10 Remtea04.02 Remtea06.03 Remtea07.15 Remtea08.15 Remtea10.11 Remtea14.12 Remtea15.04	Reasul01.05 Reasul03.03/06 Reasul04.07/12 Reasul09.09 Reasul10.02 Reasul12.02

The four communities present arguments to legitimise the normative expectations of having differentiated roles among members. Argument 2B-1, *the community should have a formal, legitimate interface with society, in order to voice its political demands*, undermines the concept of a network organization, as it implies that the community would not be able to voice their collective demands without such formal representation. The respondent Rebea07.07/09 argues that communities do not want to have representatives to outsiders, but that it is strategic to have well-prepared spokespeople to diffuse the concept of network organizations. In other words, the community should

accept this contradiction of depending on a kind of vertical structure (as the spokespeople have more power in decision-making) to promote its beliefs on network structures.

Arguments 2B-2, *it is necessary to have a group to resolve conflicts and reduce opportunistic behaviour among members*, and 2B-3, *it is necessary to have a group which takes initiatives, such as organizing meetings and events*, also undermine the concept of a network organization, as they imply that a horizontal organization is not able to solve its conflicts and takes initiatives. Thus the three arguments directly support some form of segregation (in the sense that members should have different roles), and serve to legitimise the respective carriers (2A-1 and 2A-2).

Table 6.4

Tactics	Rebea	Repea	Remtea	Reasul
2C-1 Conform to social expectations, keeping gatekeepers (moderators, facilitators) and formal representatives.	Rebea01.02/06/24 Rebea02.06 Rebea03.01/19 Rebea05.12 Rebea06.05 Rebea07.09 Rebea08.01 Rebea09.03 Rebea11.09 Rebea13.10 Rebea14.14 Rebea16.15/21 Remtea01.24 Remtea11.19/20	Repea01.09/14/15 Repea02.06 Repea04.09 Repea03.02/12 Repea06.08 Repea08.14	Remtea01.33 Remtea02.05/10 Remtea04.02/03 /12/13 Remtea06.10/20 Remtea07.15 Remtea08.12 Remtea10.08/18 Remtea13.04 Remtea14.01	Reasul01.05/21 Reasul02.03 Reasul03.03 Reasul04.12 Reasul07.05 Reasul09.09 Reasul10.02 Reasul11.02 Reasul12.09

Tactic 2C-1, *conform to social expectations, keeping gatekeepers (moderators, facilitators) and formal representatives*, reproduces the social structures carried by the carriers *expectations*, legitimating members which embody these roles. In practice, the communities reinforce the differentiation between members. For instance, the websites inform readers about who assumes the interface between the community and society, reinforcing their legitimacy in relation to other members. Also in government projects, the community keeps the same interlocutors, with the argument that it is necessary to guarantee continuity and legitimacy, thus excluding other members from the interaction (Repea04.09).

The legitimation of some members as gatekeepers, spokespeople and representatives implies that other members have less potential to be accepted by society and peers as having the same power. It could be otherwise. The communities could try to defend their ideal that in network organizations all members have the same rights and voice, permitting the continuous emergence of leaders (as summarized in table 5X).

The permanent rotation of representatives could foster greater transparency, as the continuity of processes would only be possible as far as previous discussions and decisions were shared with the whole community. In centralizing the representation of the community in a few people, it is not necessary to keep the same level of transparency to have continuity. Ordinary members cannot be sure the spokespeople represent their interests when transparency is not assured.

Furthermore, tactic 2C-1 should be understood in conjunction to other tactics, such as the fact that the leadership group defines who community representatives and gatekeepers are (summarizing tactics 7C-2 and 7C-3), and *creates obstacles for ordinary members joining the management group* (tactic 4C-1). Tactic 2C-1 is also very similar to tactic 9C-1, *centralize the representation of the community in the executive secretary*, which conforms to *scripts* (carrier 9A-1).

6.1.3. Cultural-cognitive symbolic systems

Members of the four communities recognize the influence of *hierarchical schemas* (carrier 3A-1) in their governance models. These schemas imply that some members have more power than others in the community, i.e. it is taken for granted that some will concentrate power. This assumption supports the idea of segregating decision-making processes.

Table 6.5

Arguments	Rebea	Repea	Remtea	Reasul
3B-1 It is difficult to manage the community without following a hierarchical model.	Rebea01.05/08 /23 Rebea02.11 Rebea03.17 Rebea05.05 /11/19 Rebea08.10 Rebea09.16 Rebea12.04 Rebea13.08 Rebea14.18/19 /20 Rebea16.06 Remtea11.05/06 Reasul01.16 Reasul05.03	Repea01.05/21 Repea02.13/14 /16 Repea04.08/09 /21/22 Repea08.18 Repea09.10/11 Repea11.05/07	Remtea01.05 Remtea02.17 Remtea04.02 Remtea06.01/04 /05 Remtea07.15 Remtea08.05/13 Remtea10.11/14 Remtea14.12	Reasul02.06 Reasul03.07 Reasul04.08 Reasul05.03 Reasul09.05/10 /11 Reasul11.09
3B-2 There are cognitive obstacles to creating a network organization in a hierarchical society.	Rebea01.01/08 Rebea03.20 Rebea05.14 Rebea06.07/16 /25/26 Rebea07.06/12 /17 Rebea09.01/02 Remtea01.25/26 Remtea11.08 Reasul10.12	Repea01.15 Repea04.08/21 Repea08.07 Repea10.07	Remtea01.25 /27/32 Remtea02.23 Remtea07.17	Reasul01.05 Reasul03.07 Reasul04.06 Reasul07.13/15 Reasul09.20 Reasul10.15/22

The arguments associated with hierarchical schemas try to explain the incoherence between the ideal model of constructing a network organization and the actual model of segregating decision making. In recognizing the segregation, members then try to make sense of this paradox. Both arguments are related to cognitive reasoning: *it is difficult to manage the community without following a hierarchical model* (3B-1); and *there are cognitive obstacles to creating a network organization in a hierarchical society* (3B-2). The arguments reinforce the interpretation that the network model is closer to an ideal than to an actual practice.

Argument 3B-1 directly undermines the concept of a network organization, also relating the difficulty to ideas that the community has an increasing number of members, assumes more complex tasks and needs to fulfil deadlines. Even members who have discussed network forms of organization for years argue that excess of work leads to hierarchical

models (Rebea01.05). In more strong words, Rebea05.11 states that democracy is beautiful, but if one were to try to make a project through collective discussion, one would need 1,000 years. It is for this reasons that ordinary members have not been consulted on complex projects, argues this leadership member. A core leadership member, Rebea05.19 admits explicitly that it is always a small group who decides, especially the more sensitive issues, through the segregated list. This argument reproduces the conventional perception that the segregation of decision-making processes improves the coordination of collective tasks (as summarized by Simon, 1997 [1945]: 7).

Argument 3B-2, differently, ponders that it is difficult to construct a network organization, as members in general do not know how to organize things in a network-like form, but it does not say that it is impossible. As explained by Rebea03.20, social structures are based on hierarchical, vertical models, thus members do not have sufficient empirical experience with horizontal models to be able to implement such a schema inside the community. Reasul01.05 adds that as we are used to living in societies with hierarchical structures, in which some people give orders, the communities also have some leaders who make decisions for others. Some members go further[2], defending the structure by stating that the management group has knowledge of how to organize networks, more so than other members, thus justifying the segregated decision making. This kind of reasoning supports the idea that there are two membership categories, those who are able to work in a network model (the management members) and those who are not (ordinary members)[3].

[2] Citations: Rebea05.14; Rebea06.07; Rebea07.17; Remtea01.25; Repea04.21; Repea10.07.

[3] This argument that management members know how to work in network structures may also support tactic 6C-1: *create ambiguous categories of membership, reinforcing the identity of the leadership group in relation to other members.*

Table 6.6

Tactics	Rebea	Repea	Remtea	Reasul
3C-1 Make governance rules blurred and ambiguous. Members do not know how things are decided, or who chooses community representatives. * *(*) This tactic is an aggregation of the associated sub-tactics below.*	Rebea01.08/23/24 /25 Rebea02.09 Rebea03.16/19/20 Rebea05.03/05/10 /11 Rebea06.06/08/15 Rebea07.07/12 Rebea08.03/15 Rebea09.12 Rebea10.04 Rebea13.06 Rebea14.07/13/17 /23 Rebea16.12 Rebea17.11 Remtea01.33 Reasul05.06/13 Reasul10.11	Repea01.06/07 Repea02.02/10 Repea03.10/11 Repea04.10/11 /13/23/24 Repea05.03/05 Repea06.04/07 /09 Rebea08.07/17 18/19/30 Repea11.06/07 /08	Remtea01.09 Remtea02.01/03 /15/20 Remtea03.04 Remtea05.09 Remtea06.19 Remtea07.13 Remtea08.13 Remtea10.06/19	Reasul01.12/13 Reasul02.03 Reasul05.02 Reasul06.02/03 Reasul09.03 Reasul11.07
3C-1A Do not inform ordinary members about the existence of a leadership group, and the segregation of discussion lists.	Rebea01.08 Rebea03.15/16/17 /19 Rebea05.08/19 Rebea06.25 Rebea14.17 Rebea16.08 Remtea13.12	Repea01.06 Repea02.10 Repea04.25 Repea08.17/18 /19 Repea10.05 Repea11.06/07	Remtea05.03 Remtea09.05/06	Reasul ordinary members are informed that they do not participate in decision making.
3C-1B Call consensus the agreement of a few members.	Rebea05.06 Rebea09.12 Rebea11.10	Repea03.05 Repea07.06	Remtea06.20 Remtea08.13	Reasul03.08 Reasul04.09 Reasul07.18
3C-1C Centralize the process of defining the consensus (or closing the discussion) in the leadership group.	Rebea05.07 Rebea09.13	[Not available]	Remtea01.09 Remtea02.15 Remtea04.06/13 Remtea06.11/19 /20 Remtea07.16 Remtea08.13 Remtea13.08	Reasul03.08 Reasul11.06
3C-1D Do not base decisions on numbers of votes, but on the quality of arguments.	Rebea02.08/09 Rebea05.02 Rebea06.06 Rebea07.14 Rebea13.06/07/08 Rebea14.13	Repea04.11/12 Repea06.08	Remtea01.08/09 Remtea02.15 Remtea06.19/ 20/27 Remtea08.13 Remtea13.10 Remtea14.11	Reasul03.02 Reasul11.06 Reasul14.10
3C-2 Ignore complaints against centralized structures, or questions related to accountability and transparency.	Rebea01.07/10/15 Rebea03.15/16 Rebea08.10 Rebea09.17 Rebea10.03/04/05 Rebea16.11 Remtea01.23 Remtea02.18 Remtea11.05/08 Remtea14.03 Reasul01.08 Reasul05.03/13	Rebea08.03/17/ 18/30	Remtea06.25 Remtea08.14/15	Reasul07.15

The tactics in group 3C-1, *make governance rules blurred and ambiguous*, are powerful, because they affects the cognitive perception of the actual model of governance. In this group, the rules are blurred to mask a situation in which some members are more powerful than others in decision-making processes[4]. Thus members do not know how things are decided, or who chooses community representatives.

In this group, tactic 3C-1A, *do not inform ordinary members about the existence of a leadership group, and the segregation of discussion lists*, is quite interesting. In fact, many members ignore the actual governance structure of these communities, really thinking that all members have equal power in decisions through general discussion lists. Respondent Rebea03.15/16/17/19, for instance, complains that she does not know either who is on the restricted list, or what they debate. For her, the majority of Rebea members do not know about the management group, because it is hidden from ordinary members.

Rebea03 acknowledged the presence of a management group because another one, who knew about it by chance (an email was forward to him), had criticized the practice of excluding ordinary members from the segregated list. Indeed, a leader (Rebea01.08) agrees that many ordinary members do not know about Rebea's governance structures. For her, it is difficult to inform newcomers about community procedures. Also in Repea, leaders admit that ordinary members do not necessarily know about the management group (Repea02.10; Repea08.17/18/19; Repea11.06/07). Furthermore, in Remtea, the citations related to this tactic are made by two ordinary members, who ignore the fact that decisions are not made on the general list, by all members.

Other three tactics in this group are related to blurring the rules when they use the word *consensus* in a specific way that does not correspond to its common-sense meaning (see

[4] Note that the ambiguity of rules is also related to tactic 4C-1A, but there the objective is to cover the process to join the management group, which is more related to the carrier power systems. In this topic, the rules are blurred in order to cover the fact that some members have more power than others, with consequent results in terms of segregation of decision making.

also table 5Y, section 5.1). In these communities, some *call consensus the agreement of a few members* (tactic 3C-1B). More precisely, communities *centralize the process of defining the consensus (or closing the discussion) in the leadership group* (tactic 3C-1C), also because they *do not base decisions on numbers of votes, but on the quality of arguments* (tactic 3C-1D). In sum, the consensual decision is an interpretation provided by a few leadership members, which translate the interests of some based on arguments, as far as votes are not used to define agreements.

Explaining how the community chooses its representatives, for instance, Rebea13.06/07/08 argues that the community does not structure the choice through voting, because it would mean reproducing either representative democracy, with elections, or the hierarchical culture of representation. For the respondent, the formation of consensus should consider the quality of arguments, not votes. Remtea01.09, a leadership member, relates that in consensus formation, votes are counted in an 'imprecise way' (*sic*), confirming that in general it is a leadership member who declares the final decision. More directly, Remtea06.19/20 defends the fact that the community does not count votes to decide issues, as the quality of arguments should be more relevant than the quantity of votes.

Complementarily, tactic 3C-2, *ignore complaints against centralized structures, or questions related to accountability and transparency*, supports hierarchical structures in an environment in which many members do not agree with the centralization of power[5]. For Rebea10.03/04/05, the dynamic of the discussion list helps the leadership group to ignore the complaints, as the overload of information reduces the relevance of each message. Thus new messages induce people to forget about previous complaints.

[5] As informed in subsection 5.2.3, some members question the legitimacy of leaders in having more power in decision-making processes. Citations: Rebea01.08; Rebea06.16; Rebea07.15; Rebea14.17; Rebea16.06; Repea08.03/17/18; Repea09.12; Remtea08.14/15; Remtea11.05/08; Reasul01.08; Reasul05.13; Reasul: Reasul09.10; Reasul10.17.

Tactics 3C-1 and 3C-2 also support the *standard operating procedures* (carrier 7A-1), which are closely related to the *hierarchical schemas* (carrier 3A-1).

6.1.4. Regulative relational systems

The four communities recognize the influence of *power systems* (*the influence of sponsors*) in favouring the centralization of decision making (carrier 4A-1). In this investigation, however, the *governance systems* (carrier 4A-2) only relates to Remtea, as the community has a governance structure that is very close to the one of its main sponsor, an academic research group (GPEA/UFMT).

Table 6.7

Arguments	Rebea	Repea	Remtea	Reasul
4B-1 The sponsor has more power to define directions.	Rebea01.12/13 Rebea02.14 Rebea03.19 Rebea05.09 Rebea06.18 Rebea07.18/19 Rebea13.11 Rebea14.07/08 /11/12 Remtea01.30 Remtea11.15 Reasul05.06	Repea02.12/23 Repea08.15 Repea09.07 Repea10.06	Remtea01.20 Remtea02.05 Remtea04.11 Remtea06.02/29 Remtea08.07/08 Remtea11.15	Reasul01.01 Reasul02.05 Reasul05.06 Reasul07.11/12 Reasul09.13
4B-2 Ordinary members are not interested in managing the community.	Rebea01.09/25 Rebea03.17 Rebea06.07 Rebea07.23 Rebea13.08 Reasul01.08/16 Reasul05.03	Repea01.05/16 Repea02.02/18 Repea03.08/10/12 Repea04.12/13 Repea07.03 Repea08.03 Repea11.05/20	Remtea02.10 Remtea06.01/05/ Remtea08.14	Reasul01.08 Reasul04.08 Reasul05.03 Reasul09.04
4B-3 Some members concentrate decision-making processes because they are more active and committed than others.	Rebea01.04/05 /17/25 Rebea02.07 Rebea03.22 Rebea05.05 Rebea06.16/20 Rebea07.04/12 /17/20 Rebea10.10 Rebea12.05 Rebea14.20 Remtea01.33 Remtea11.07	Repea01.15/21 Repea02.03/16 Repea03.10 Repea04.12 Repea06.13 Repea07.04/06 Repea08.18 Repea10.02/05/07 Repea11.02/15/19	Remtea01.04 Remtea02.02/15 Remtea04.13 Remtea05.03 Remtea06.14 Remtea07.11/12 /19 Remtea08.01/12 Remtea11.23 Remtea13.07 Remtea14.04	Reasul01.05/26 Reasul02.02/06/07 Reasul03.02/03 Reasul04.06 Reasul07.13/15/16 Reasul08.06/07 Reasul09.04/06 /09/11 Reasul10.02/10 Reasul11.02/04/11 Reasul12.07 Reasul13.02

There is an understanding in the four communities that *the sponsor has more power to define directions* (4B-1). An excellent example of this power is the elaboration of the so called EA.Net (an Internet television channel which is focused on environment education). This channel was negotiated between the federal government and Rebea's executive secretary. Other Rebea members, including those that are in the management group, were not informed beforehand about the project (Rebea03.19). The government imposed this condition of keeping the conversations restricted to a small group of members (Rebea05.07/08).

This argument 4B-1 naturally undermines the idea of creating a network organization as it assumes that some members have more influence than others. It could be otherwise. As explained by Rebea02.14, the problem is not receiving money from the government, but analyzing whether the communities keep their autonomy when deciding how to use the funding. Observing their practices, some members fear that the government funding has been exchanged for political support[6], and that one cannot separate what is public from what is private when the government is sponsoring community projects (Rebea14.07/08/12).

The other two arguments – that *ordinary members are not interested in managing the community* (4B-2), and that *some members concentrate decision-making processes because they are more active and committed than others* (4B-3) – have the objective of legitimising leadership members as those that are interested in managing and those that are more active. For Repea02.18, ordinary members are concerned with receiving information, not with organizing community events. Reasul11.02 and Reasul09.09 defend the centralization of power to the main leader, because he is more active than others. These two arguments (4B-2 and 4B-3), nonetheless, do not contradict the possibility of having a network organization, as they only suppose some members prefer omitting themselves from participating, and some prefer doing otherwise.

[6] Citations: Rebea07.18/19; Repea02.23; Remtea04.11; Reasul05.06.

Table 6.8

Tactics	Rebea	Repea	Remtea	Reasul
4C-1 Create obstacles for ordinary members joining the management group (and the respective segregated discussion list).	Rebea01.10/17 /24 Rebea03.15 Rebea04.04/10 Rebea05.06/18 Rebea06.07/09 /10 Rebea07.04/06 /20/22 Rebea09.15 Rebea10.09/12 /15 Rebea11.10 Rebea13.06 Rebea14.16/18 Rebea16.05 Remtea11.20 Reasul10.12	Repea01.06/13 /15/18/21 Repea02.03 Repea02.15/18 Repea03.08/10 /12/13 Repea04.08/12 /24 Repea06.06 Repea07.03/06 /09 Repea08.03/04 /07/13/18/23 /24 Repea10.05/07 Repea11.05/06 /15	Remtea01.01/04 /05/06/07/18 Remtea02.05/10 /15 Remtea03.05 Remtea04.01/03 Remtea05.05/08 Remtea06.01/10 /13/17/20 Remtea08.12/19 Remtea10.11/13 /14/24 Remtea14.11 Remtea15.04	Reasul07.15 Reasul09.12 Reasul10.17 Reasul12.13 Reasul13.12
4C-1A Keep unclear rules about the criteria for accepting members in the management group.	Rebea10.09/12 /15 Rebea05.13/14 Rebea14.18	Repea03.12 Repea08.07/ /18/23	Remtea01.04 Remtea08.19	Reasul07.15 Reasul09.12 Reasul10.17 Reasul13.12
4C-1B Keep some debates only among your peers in the management group.	Rebea01.10 Rebea03.15 Rebea05.06 Rebea06.07/09 Rebea07.20 Rebea09.15 Rebea11.10 Rebea14.16 Rebea16.05	Repea01.13/15 Repea02.15 Repea04.08 Repea06.06 Repea07.03 Repea08.04/07 /24 Repea11.05	Remtea01.07 Remtea02.10 Remtea03.05 Remtea04.03 Remtea05.08 Remtea06.01/02 10/13 Remtea08.12 Remtea10.11/14 Remtea14.11 Remtea15.04	This tactic is present in this community as ordinary members only receive a news bulletin, being excluded from decision making.
4C-1C Require members to attend face-to-face meetings to participate in the management group and decision-making processes.	[Not cited]	Repea01.06 Repea02.03 Repea03.10 Repea08.13 Repea11.06	Remtea01.06/18 Remtea02.05 Remtea04.01 Remtea05.05 Remtea06.13 Remtea08.19 Remtea10.13/24	[Not cited]
4C-1D Undermine the legitimacy of ordinary members as potential leaders. Such as: (A) accuse them of having opportunistic behaviour; (B) judge that some do not have enough knowledge to represent the community or publish on the website; (C) infer that members are not active enough to contribute to the management group; and (D) argue that some ignore the history of the community.	Rebea01.17d Rebea04.04a Rebea05.18a Rebea06.10a Rebea07.04/06d Rebea07.22b Rebea10.12c Rebea13.06b Rebea14.18b Remtea01.24a Remtea11.20a Reasul10.12d	Repea01.18/21b Repea01.15c Repea02.18c Repea02.03d Repea03.08/10 /13c Repea03.12d Repea04.24b Repea04.12c Repea07.09b Repea07.06c Repea10.07b Repea10.05c Repea08.03c Repea08.18d Repea11.15c	Remtea01.05/24 /25a Remtea01.04 /06c Remtea01.04/06d Remtea02.15c Remtea02.05d Remtea06.20b Remtea06.17c	Reasul12.13d

4C-2 Avoid conflict with and criticisms of sponsors and people in strategic positions in the government, universities and important NGOs, in order to not close doors for future opportunities.	Rebea01.18/19/20 Rebea02.13/23 Rebea07.02/03/10/19 Rebea08.11/16 Rebea14.06/12 Rebea16.19 Rebea17.14 Repea02.23 Reasul05.06 Reasul14.08	Repea01.23/26 Repea02.12/21/22 Repea06.10 Repea08.11/27	Remtea02.16/21 Remtea04.04/05/06/11 Remtea06.28 Remtea07.21	Reasul05.09/10 Reasul07.05/10/11/12 Reasul14.08
4C-3 Exclude from debate within the management group those that do not agree with the leadership orientation.	Rebea01.14/16 Rebea02.11/12 Rebea04.03/04/07 Rebea13.14/15 Repea01.25 Repea02.21	[not cited]	[not cited]	[not cited]

All tactics in group 4C-1 have the objective of *creating obstacles for ordinary members joining the management group (and the respective segregated discussion list)*. The obstacles are diverse: from requiring people attend face-to-face meetings to undermining 'others' as leaders. These tactics are also efficient because the leadership group controls which members join their stratum.

Few members cited tactic 4C-1A[7], *keep unclear rules about the criteria for accepting members in the management group*, but still it brings interesting examples of how blurred rules create obstacles to the emergence of new leaders from the general discussion lists. Rebea10.12/15, for instance, criticizes a situation in which it was not clear why the management group had not accepted a member who asked to join the segregated discussion list. For him, in not stating clearly the rules, people do not have arguments to base any complaint upon.

The same respondent relates another case in which a member suggested the formation of a group to debate a relevant issue. Immediately, other members organized themselves to

[7] Tactic 4C-1A is also related to tactic 3C-1 (subsection 6.1.3), of *making governance rules blurred and ambiguous*; and to tactic 6C-2 (subsection 6.1.6), of *restricting the management group to those that share the same identity*. As identity is an untangible attribute, requiring a member to share the same identity in order to join the management group equals to cultivate ambiguous rules.

remove the discussion from the responsibility of this first member. The group was successful in the strategy: the person who suggested the debate was totally excluded from it. Again, a new leadership did not emerge, although the person had the intention of being more active (Rebea10.09). A leadership member (Rebea05.13/14) confirms that the management group may assume the responsibility for projects that are proposed by other members. In practice, it implies blocking the emergence of new leaders.

In Remtea, a core leadership is categorical that it is not any member that can join the segregated discussion list, although this respondent does not clarify the criteria for accepting a person in this group (Remtea01.04). Indeed, leadership members suggest that those who are related to the academic research group have greater probability of joining the management group than others[8]. In Repea, representatives of the government at federal and State levels were included in the management group, to discuss community projects (Repea08.07). This respondent, a leader, was not able to explain which criteria were used to include these government officials.

Continuing with tactic 4C-1A, Reasul appears to be the most open management group, as anyone can ask to join it. Still, there are ambiguities. For instance, the leadership group has to approve any new member and the criteria for being accepted are not clear (Reasul13.12). Furthermore, a member links acceptance in the management group with some principles that are shared by the group, implying that the group has rules related to its values (Reasul07.15).

Another interesting case related to Reasul's management group is that a leadership member admits that in a specific funding project (not the one related to the FNMA, cited in the carrier *legislation*) only a few management members were invited to participate in the discussion (Reasul09.12). The respondent explains that this project was small, thus the management members who had organized themselves to ask funding understood that the project should involve only those who would receive money, rather than all management members. This example is illustrative that within the management groups

[8] Citations: Remtea02.21; Remtea04.02; Remtea06.02; Remtea07.01; Remtea08.09.

some members centralize decisions. Power is not distributed evenly among management members, thus the possibility of participating in the management group may not necessarily mean participation in decision making, thus keeping blurred the meaning of participating in these groups. Indeed Reasul03.02 and Reasul12.12/13 clarify that in the management group older members have more legitimacy than younger ones.

Tactic 4C-1B, *keep some debates only among your peers in the management group*, is interesting because the segregation of specific debates means that ordinary members do not know about some relevant issues that the community is discussing. As well summarized by Rebea03.15 (an ordinary member), participants can only imagine what the management group is discussing on the segregated list, as they do not share this debate with the general list. In Remtea and Repea, for instance, issues related to funding and government meetings are kept on the segregated discussion list, say management members[9]. In Reasul it is clearly defined that ordinary members do not participate in management discussions, thus this practice is explicit.

Tactic 4C-1C, *require members to attend face-to-face meetings to participate in the management group and decision-making processes*, is common to Repea and Remtea. In both communities, the management groups can easily meet in the respective capitals of their States (São Paulo and Cuiabá). Indeed, the great majority of their meetings are in these cities. In both cases, this tactic excludes participants who live in other cities, because they would need to pay the cost of transport and lodging. Most people do not have the resources for that. Thus those members who have the resources to attend face-to-face meetings are more powerful in the community. It means that the sponsors again have indirect power in the community structure, as they sponsor some participants and not others. This is the case, for instance, when the federal government organizes a meeting and invites some specific representatives from these communities[10].

[9] Citations: Repea08.04; Remtea02.10; Remtea06.02.

[10] Citations: Rebea01.10; Rebea05.06; Remtea01.30; Remtea08.14.

Tactic 4C-1D, *undermine the legitimacy of ordinary members as potential leaders*, in practice, reduces the chances of ordinary members joining the management group. When discussing the segregation between leaders and ordinary members, some respondents argue, for instance, that ordinary members who have tried to represent the community in events or courses displayed an opportunistic behaviour. Other related arguments are that ordinary members do not have enough knowledge, or they are not active enough, or they do not know the history of the community, thus they cannot try to be community leaders. As expressed by Rebea07.04, new members do not know the community history. For Remtea01.24/25 also, leadership members have been together for a long time, are more sensible, and do not act in an opportunistic way. These arguments work because communities do not have clear rules for renewing leadership, and management groups have the last say in accepting new members in their strata.

Tactic 4C-2, *avoid conflict with and criticisms of sponsors and people in strategic positions in the government, universities and important NGOs*, is somehow obvious, and reinforces the legitimacy of powerful people in the community, in relation to decision-making processes. Some members go a step further, trying to please these more powerful people. For instance, for Rebea01.18/19, many conflicts do not emerge in the studied communities because of the strong presence of academics, who preserves their interests in the online discussions. In other words, as suggested by Remtea04.04/05/06, one should be prudent and avoid conflict with an academic supervisor on the discussion lists. Also Rebea08.11/16 argues that the membership in these environmental-education communities may improve the social networks and the opportunities to be employed or to do a masters or a Ph.D. in the field. Thus members avoid conflict with powerful social structures, concludes the respondent. Remtea02.16/21 goes in the same direction, commenting more specifically that many are in this community in order to create social ties with the main academic leadership.

Tactic 4C-3, *exclude from debate within the management group those that do not agree with the leadership orientation*, is quite straightforward in power disputes (ostracism), but curiously here it only appears in relation to Rebea. In this case, respondents affirm that

the leadership group has two practices for isolating other management members from debates: (i) excluding people from the segregated discussion list without previous communication; and (ii) excluding people from face-to-face meetings (the person is no longer invited, although he or she formally keeps a position in the management group and on the segregated discussion list). The tactic 4C-3 does not mean expulsion from the community, only from the leadership group or from certain debates within the management group, which is a form of keeping decisions among peers.

6.1.5. Normative relational systems

Two carriers in the category normative relational systems were identified by the four communities, both related to *authority systems*. Members assume that *status* in society (5A-1) and the *government influence* (5A-2) affects the legitimacy members have in the community, thus favouring the centralization of decision making.

Table 6.9

Arguments	Rebea	Repea	Remtea	Reasul
5B-1 Some people have more authority in the environmental education field, justifying that they have greater legitimacy in the community.	Rebea01.04 Rebea05.13/19 Rebea06.27 Rebea07.10 Rebea08.14 Rebea09.14 Rebea13.01 Rebea14.02/04 /18	Repea07.04/05 /07/12 Repea09.09 Repea10.11/12 Repea11.17/19	Remtea01.04/15 Remtea02.02/07 /21/24 Remtea04.06 Remtea06.15/20 Remtea10.05/26 Remtea11.22	Reasul01.21 Reasul05.08 Reasul07.02/07 /17 Reasul08.10 Reasul10.05 Reasul15.04
5B-2 Older members have created the community (or worked more), thus they have more legitimacy to make decisions.	Rebea05.18/19 Rebea06.07 Rebea07.04/09 /12 Rebea11.08/12 /13 Remtea01.32	Repea03.12 Repea04.10 Repea08.03/05 /11/19/20 Repea10.06 Repea10.11/12 Repea11.17	Remtea01.04/10 Remtea02.02/07 /15 Remtea05.03 Remtea06.14 Remtea07.13 Remtea10.26 Remtea13.02/07 Remtea14.04	Reasul03.06 Reasul06.05 Reasul07.13 Reasul12.09/13

Arguments 5B-1 – *some people have more authority in the environmental education field, justifying that they have greater legitimacy in the community* – and 5B-2 – *older members*

have created the community (or worked more), thus they have more legitimacy to make decisions – work in the same direction of justifying the centralization of decision making in the leadership group. Greater respect is directed to known academics (especially those that have influenced the field through their publications). Both arguments undermine the network model, as they work against the idea of equal distribution of power among members (see table 5X).

Rebea05.13/18 synthesises both arguments, defending the fact that the older members who created Rebea have authority to be on the segregated lists because they have knowledge about the field. For one main leader, the management group is a 'historical construction' (*sic*), which has legitimacy for its greater power in the governance structures (Rebea07.04/12). Also for Repea08.19/20, a younger member in the community does not have credibility to question the existence of a management group that has been working there for a long time. And Reasul07.02/07 recalls the need to respect those who have knowledge about the field, suggesting that status outside the community should be respected inside the community as well.

Table 6.10

Tactics	Rebea	Repea	Remtea	Reasul
5C-1 Organize leadership peers to give support to each other on the general discussion list, legitimising your common ideas. Articulate agreements in private discussions (online and offline) (5C-1A). Form a group of peers and supporters to back leadership group proposals (5C-1B).	**5C-1A** Rebea01.23 Rebea04.03/04 /10 Rebea05.03/18 Rebea07.03 Rebea08.10 Repea06.13 Reasul05.13/14 **5C-1B** Rebea01.18/19 Rebea09.14 Rebea10.09 Reasul10.12	[not cited]	Remtea01.05/06 /07/24/25 Remtea02.15/19 Remtea06.02/10 /27 Remtea07.18 Remtea08.12/13 Remtea01.05 Remtea02.07/19 Remtea04.02 Remtea06.07 Remtea07.20 Remtea08.19 Remtea11.22	In Reasul, the general discussion list only channels news bulletins. Thus this tactic is not related to this context.

5C-2 Flame members who do not agree with the leadership orientation.	Rebea03.04/05 /06/07/08 Rebea04.04/05 /09/10 Rebea07.05 Rebea10.15	Repea04.06 Repea10.10/11 /12	Remtea01.10/13 /28 Remtea02.13 Remtea04.10 Remtea06.14/15 /16/23	Reasul02.14 Reasul07.03
5C-3 Set the agenda, occupying the discussion list with the themes the leadership considers relevant.	Rebea01.25 Rebea03.13 Rebea04.06 Rebea06.12 Rebea07.15 Rebea08.11 Rebea10.07/09 Rebea13.20 Rebea14.02/11	Repea01.03 Repea08.06/07 /09 Repea11.19	Remtea01.10 Remtea02.21 Remtea04.08/10 Remtea06.06/10 Remtea10.05	Reasul02.09 Reasul05.08 Reasul07.07 Reasul08.10
5C-4 Ignore the contributions and opinions of members.	Rebea03.04/07 Rebea04.09 Rebea10.09/15 Rebea13.13 Repea02.21	Repea01.25 Repea08.01/28 /29	Remtea06.14	Reasul07.07 Reasul15.04
5C-5 Keep silent for not having legitimate knowledge.	Rebea03.03/04 /06/12 Rebea06.27 Rebea07.10 Rebea08.14 Rebea09.14 Rebea11.04 Rebea14.04 Remtea11.16	Repea08.01 Repea11.20	Remtea01.15 Remtea02.08/09 Remtea04.04/05 /06/08/09 Remtea07.09 Remtea08.09 Remtea10.06 Remtea11.16	Reasul01.27 Reasul02.09/12 Reasul03.04 Reasul04.03 Reasul05.11 Reasul06.01 Reasul07.02 Reasul10.05/20 Reasul14.11

Tactic 5C-1, *organize leadership peers to give support to each other on the general discussion list*, helps to reinforce the legitimacy of some groups in segregated decision making. This tactic, cited by Rebea's and Remtea's members, is really divided in two. The first (5C-1A) is related to *articulating agreements in private discussions* (through the segregated discussion list or personal emails) before presenting them to the whole community. In this process, leadership members make agreements in private, and then present these arrangements as suggestions (not decisions) to the general list, making sure the peers (who have participated in the private agreement) will support the proposal straightforwardly in front of others (as spontaneous contributions).

This tactic is based on the idea that other members will not organize themselves in time to change the previous agreement. Through this procedure, these leadership members try

to legitimise the decision as being a democratic, collective outcome of the discussion on the general list. In simulating an improvised debate, the leadership members try to silence other voices through the strength of their legitimacy. Other members would feel less prone to oppose their opinions after observing that a suggestion has received support from other leadership members, explains Rebea04.03/04. Rebea05.18, a leader, admits that making private agreements is a common practice among some leadership peers.

In practice, if the desirable agreement is not confirmed by the collective, the leaders may fall back on their authority to decide. Respondents related three situations in which the management groups in Remtea and Rebea recalled the discussion from the general lists to the segregated lists because ordinary members did not agree with the leadership's suggestions[11]. In the three cases, the communities should have chosen representatives to go to events. Theoretically, the ordinary members would decide, but in practice the leadership members had some preferred names, which they had suggested, but the general lists did not accept. On two occasions, Remtea's leadership members simply closed the discussion, deciding that the member they indicated would go. On another occasion, Rebea was not represented in the event as leaders and ordinary members were not able to achieve an agreement.

The second tactic in this group (5C-1B) is related to *forming a group of peers and supporters to back leadership group proposals*. For instance, an academic in the management group can invite his or her students to join the segregated list. This clearly occurs in Remtea, in which the management group is mainly composed of students from an academic research programme. For Rebea01.18/19, it is evident that some academics ask their students to become members, which affects the power balance in the communities, as the students simply support these academics. In this case, the tactic may work in two fronts: backing the leadership within the management group (when the supporters join this segregated collectivity) and within the general list.

[11] Citations: Remtea01.05/06/24/25; Remtea02.15; Remtea08.12/13; Rebea01.23; Rebea07.03.

Tactic 5C-2, *flame*[12] *members who do not agree with the leadership orientation*, is very common on many discussion lists[13]. The idea here is to reduce the legitimacy of members who do not agree with the mainstream discourse. As clearly explained by Remtea06.14/15 (a leader), if a member say 'stupidities' (*sic*) against the mainstream ideology, he or she will be flamed. Rebea04.09 relates that sometimes the criticisms are very intense, and a college teacher, for instance, may feel 'stupid' (*sic*) in front of others when criticized by an academic. The flaming also may be subtle but offensive, such as through making questions that the person in not able to answer (Remtea01.28), or asking his or her educational level: 'Do you have a masters?'(Rebea04.04/10); "Have you read this book?' (Reasul07.03).

A leader (Rebea07.05) judges that in some circumstances it is necessary to attack members to enforce behaviour. In this specific example, this leader supported a flaming process of an ordinary member who accused leaders of choosing in private the member who should go to an event (it was one of the cases related in tactic 5C-1A). The flaming was used in this case to discourage the criticism against leadership behaviour. Commenting on the power of flaming, Repea10.10/11/12 explains that if nobody defends the attacked members, they will feel that the community as a whole is behind the attack. The result is that people fear being flamed (Rebea03.04/05/08).

The tactic of *flaming* (5C-2 in the table above and 6C-3 in table 6.12) in this investigation is related to the both carriers: *authority systems* (5A-1 and 5A-2) and *identities* (6A-1). The citations are listed in the table above, but the same citations are valid for the twin tactic 6C-3. Respondents associated the flaming with aggressions against members in two situations: when they express either a kind of knowledge, or beliefs and values, which are not legitimised by the leadership[14]. In the first case, legitimate knowledge is questioned; in the second case, legitimate identity. The problem is that it is not always clear what is

[12] Slang in Internet-mediated communities, which means to insult or criticize members aggressively.

[13] This is the same tactic referred as 6C-3 in table 6.12.

[14] Ordinary members may also flame, but here the focus is on the tactic of flaming for the reason of reproducing authority systems and identities.

being attacked. For instance, Rebea03.04/05 stated that some people are flamed because of their 'divergent opinions' and 'lack of understanding about issues' (*sic*). Rebea04.04/09/10 relates the flaming to divergences in 'opinions' and 'type of knowledge' (the empirical knowledge of social activists versus the academic knowledge). For this reason, I kept the citations of flaming together, as the tactic is the same, and it is used in different circumstances, sometimes in blurred ways.

Tactic 5C-3, *set the agenda, occupying the discussion list with the themes the leadership considers relevant*, helps the leadership members to legitimise themselves as being those who conduct the relevant debates. It is also a way of keeping the debates centred on specific themes. Sometimes this tactic consists of changing the topic in debates, when previous ones are not convenient for the leadership group. As argued by Reasul05.08, some people are empowered because they are always manifesting themselves on the discussion list. Again this legitimacy favours the centralization of decision making.

Tactic 5C-4, *ignore the contributions and opinions of members*, is applied mainly against ordinary members who do not have status in the field or do not agree with the mainstream ideas. Talking about her experience, respondent Repea08.28/29 explains she used to send messages, but that nobody answered, which reduced her motivation to contribute. She understands that this is a way of saying that one is not important in comparison to other members, mainly the academics.

Tactic 5C-5, *keep silent for not having legitimate knowledge*, is adopted by members who do not feel legitimate or comfortable with giving their opinion publicly. Respondents also associate this tactic with the fear of making mistakes. In keeping silent, members somehow reinforce the legitimacy of some leadership members, which often participate in the discussions. As explained by Remtea04.04/05/06, if a main leadership member gives an opinion, the debate finishes, as other members, even within the management group, would avoid arguing with a legitimate voice. Also Rebea03.12 reports that so many people do not want to manifest themselves on the discussion lists, concluding that many members may be afraid of expressing their opinion as the discussions are very

academic. For this respondent (Rebea03.03/04/06), the discussion list is not a space of dialogue, but a space in which the academics talk, and the others listen.

6.1.6. Cultural-cognitive relational systems

Communities' leadership members share similar history, values and ideas with other leaderships in the government and universities. In the adopted framework, this situation is related to *identities* (carrier 6A-1). This common identity leverages the influence of power systems in the community, as well as segregates non-peers from decision making processes.

Table 6.11

Arguments	Rebea	Repea	Remtea	Reasul
6B-1 People are the same inside and outside the community: they carry their identities (as well as the conflicts inherent to their identities).	Rebea01.01 Rebea02.12	Repea01.26 Repea04.03 Repea11.21	Remtea01.13 Remtea02.13/25 Remtea04.02 Remtea06.06 Remtea07.01/21	Reasul05.09 Reasul07.03 Reasul08.10 Reasul12.17

Argument 6B-1 is the simple recognition that people keep their identities in different environments: *people are the same inside and outside the community.* It ponders the statement that everybody can express themselves in a network organization (as suggested by some members, see table 5X), reintroducing the commonsense idea that society works in simultaneous layers. Thus members cannot avoid their identity, especially because these communities are not anonymous and people know each other and work in the same field. The same argument may be related to *jobs and roles* (carrier 8A-1).

Table 6.12

Tactics	Rebea	Repea	Remtea	Reasul
6C-1 Create ambiguous categories of membership, reinforcing the identity of leadership members in relation to ordinary ones.	Rebea01.08/27 Rebea05.14 Rebea06.16/17 /20/26 Rebea09.15 Rebea16.05 Remtea01.27 Remtea11.07	Repea01.21 Repea02.04 Repea03.0110 Repea04.12/24 Repea08.03/19 Repea10.07	Remtea01.04/05 Remtea02.09/11 /13/15 Remtea03.04/05 Remtea04.02 Remtea06.02 /06/07/08/13 Remtea07.01 Remtea08.06/18 Remtea10.06 Remtea13.01 /03/04/05/06/09 Remtea14.04/08 /09	Reasul01.08/12 /13 Reasul02.03 Reasul04.05 Reasul07.01/15 Reasul08.06/07 Reasul09.04/17 Reasul10.12 Reasul11.08 Reasul15.05
6C-2 Restrict the management group to those that share the same identity.	Rebea03.22 Rebea05.14 Rebea06.08/ 16//20/26 Rebea14.16/17 Remtea01/32 Remtea11.07 Reasul10.11	Repea01.21 Repea02.03 Repea03.01/10 Repea04.03/12 /24 Repea08.03/07 /19 Repea10.07	Remtea01.04/05 Remtea02.09/ 15/20 Remtea03.04/05 Remtea06.07 Remtea08.19 Remtea10.19 Remtea14.04	Reasul07.15 Reasul08.05 /06/08/10/ /11/12 Reasul12.14
6C-3 Flame members (see 5C-2).				
6C-4 Expel members who do not agree with the mainstream identity.	[not cited]	[not cited]	Remtea01.10/13 Remtea02.12/13 Remtea04.03 Remtea06.13 Remtea07.05/06 Remtea08.04 Remtea14.10 Remtea15.02/04	[not cited]
6C-5 Keep silent for disagreeing with the mainstream identity.	Rebea08.13/14 Rebea09.14 Rebea17.08 Reasul14.11	Repea02.21 Repea08.19 Repea10.09/11	Remtea01.15/16 Remtea03.04/05 Remtea04.06/08 /09 Remtea07.09/21	Reasul01.27 Reasul05.07/11 Reasul14.11

Tactic 6C-1, *create ambiguous categories of membership, reinforcing the identity of leadership members in relation to ordinary ones*, helps leaders to restrict access to the management group. This differentiation of membership has appeared in some answers when the respondent was explaining the existence of a management group and the related segregated discussion list.

For instance, leadership members argue that participants who do not have a sense of belonging and do not promote the principles of a network organization are not really

'members' (Rebea06.16/17). These people, nonetheless, have been accepted as members on the discussion lists and they have not been asked to prove their sense of belonging and their commitment to the network principles to become members.

In this attempt to create ambiguous membership categories, some respondents argue that being a participant on the general discussion list does not mean being a community member[15]. This argument undermines the membership status of all those on the general discussion lists, without clarifying the meaning of being a member. Another example comes from the different definitions of membership by Reasul01.13 and Reasul02.03. Although both are core leaders in the community, the first says that members are only those that are in the management group, and the second argues that members are anyone, including those that only receive news bulletins. If one does not know who is a member, one cannot complain that members are excluded from decision making. This tactic thus is also associated with tactics in group 3C-1, of blurring governance rules as a way of covering the presence of hierarchical schemas.

Tactic 6C-2, *restrict the management group to those that share the same identity*, is also common in the four communities. For instance, leaders argue they restrict the group to those that are committed (the management group decides who is in this category)[16]. Commenting on the segregation of decision-making processes, Rebea06.20 reports that people in the leadership group share the same principles, and that she is not sure whether the ordinary members share these values. For Repea04.03, leaders need to keep the segregation of discussion lists because they do not know how to manage the diversity of interests, which has been created by the increasing number of members in the community.

[15] Citations: Rebea05.14; Rebea06.20; Repea02.04; Remtea02.11; Remtea08.06/18; Remtea13.01/06/09; Reasul01.08; Reasul07.01; Reasul09.17; Reasul10.12.

[16] As cited in subsection 6.1.4, tactic 6C-2 is related to tactic 4C-1A of *keeping unclear rules about the criteria for accepting members in the management group.*

Another interesting example is given by Reasul08.10/11. Relating to a case of a member who offered to help the management group, the respondent (a leader) was concerned that this participant does not follow the community mainstream concept of environmental education. This leader says that this member created a zone of discomfort, because he is offering to help, but he does not follow the mainstream philosophy. As the management group needed his help, leaders tried to change the way this member conceptualizes the field. In sum, the leadership members have make an effort to frame the way the new contributor will collaborate, in order to preserve the mainstream identity.

Tactic 6C-4, *expel members who do not agree with the mainstream identity*, occurred only in Remtea (at the time of the interviews), and it is an extreme example on how the community leadership could not accept strong opposition to their own identity on the general list. In this specific case, the problem of identity caused the expulsion, not other reasons (such as misbehaviour). Many members confirm that this member was expelled because he professes a different ideology (against the preservation of the environment, in accordance with the mainstream interpretation of the event), which disturbed the leadership members deeply to the point that they expelled the 'outsider'[17].

Tactic 6C-5, *keep silent for disagreeing with the mainstream identity*, affects members who do not feel the sense of belonging to the mainstream group (even within the management group, as there are divergences among leaders). Members exclude themselves from participating, avoiding being flamed or ostracised for not being aligned with the mainstream identity. As explained by Rebea08.13, ordinary members do not participate because they know they cannot really join the group which controls the discussion list. The tactic of *flaming* (6C-3) can also leverage this kind of silence. There are other indirect ways, such as keeping questioning non-academic people as to why they do not do a masters or a Ph.D., complains Repea02.21. In reinforcing the identity of the mainstream group, others feel inadequate about expressing themselves. The language style, for instance, excludes some from debates in Remtea, as the majority of the

[17] Citations: Remtea01.10, Remtea02.12, Remtea04.03, Remtea07.06, Remtea08.04, Remtea14.10, Remtea15.04.

leadership group are people from the academic environment, conclude respondents[18]. There are similar complaints in Reasul as well (Reasul05.11).

6.1.7. Regulative routines

In the category of regulative routines, members of all communities identify the practice of centralizing decision-making processes in the leadership group, which in this investigation is related to *standard operating procedures* (carrier 7A-1) of hierarchical organizations (drawing upon Simon, 1997 [1945]).

Table 6.13

Arguments	Rebea	Repea	Remtea	Reasul
7B-1 The management group should make decisions.	Rebea02.08 Rebea04.10 Rebea06.09/13 Rebea07.20 Rebea08.07/11 Rebea09.15/16 Rebea14.18 Reasul10.11	Repea04.09 Repea05.05 Repea06.13 Repea07.06 Repea08.04 Repea10.01 Repea11.04/10 Rebea08.07	Remtea01.07 Remtea02.09/10 /13/19 Remtea04.03 Remtea08.04/12 Remtea10.14	Reasul04.10 Reasul08.05 Reasul15.05

Discussing the segregation of decision making, respondents argue that *the management group should make decisions* (7B-1). Sometimes they do not offer further explanation of their argument[19]. Other times they say that the segregation brings greater managerial efficiency for the community[20], with arguments, for instance, that management members are better prepared than others (Reasul15.05; Rebea14.18), and that management members know norms and procedures in discussing projects (Repea04.09). In a similar direction, respondents emphasise that management members know the previous agreements related to the community (Rebea02.08; Rebea06.09/13). Finally, others

[18] Citations: Remtea03.04/05; Remtea04.08/09; Remtea07.09.

[19] Citations: Rebea06.09; Repea08.04; Remtea04.03; Remtea08.04/12; Remtea10.14; Reasul08.05.

[20] Citations: Rebea06.09/13; Rebea07.20; Rebea08.07/11; Rebea09.16; Rebea14.18; Repea04.09; Repea05.05; Repea06.13; Repea07.06; Repea10.01; Repea11.04/10; Reasul15.05.

defend the segregated structure as a way of protecting ordinary members from disturbances related to polemical issues (Remtea02.10; Rebea04.10; Rebea09.15).

Table 6.14

Tactics	Rebea	Repea	Remtea	Reasul
7C-1 Keep a segregated discussion list for leadership members.	Rebea01.04/08 Rebea02.04 Rebea03.15/22 Rebea04.03/04 Rebea05.06 Rebea06.07/09/16 Rebea07.07 Rebea08.02/10 Rebea09.15 Rebea13.08 Rebea14.02/18 Rebea16.05 Remtea11.04 Reasul01.08	Repea01.05/06/13 Repea02.02/10/15 Repea03.09 Repea04.07 Repea06.03 Repea07.02 Repea08.04 Repea11.05	Remtea01.04 Remtea02.04 Remtea04.03 Remtea06.02 Remtea07.18 Remtea08.02/04 Remtea15.04	Reasul01.09/15 Reasul02.03 Reasul04.07/08 Reasul08.05 Reasul10.07 Reasul15.05
7C-2 Keep control over community gatekeepers (moderators and facilitators).	Rebea01.07/08/21 Rebea05.01/02 Rebea06.28 Rebea08.02 Rebea14.21	Repea01.05/09/10 Repea02.06 Repea03.03/07 Repea04.05 Repea10.02	Remtea02.04 Remtea04.03 Remtea07.15 Remtea08.04 Remtea10.08/19 Remtea14.07	Reasul01.14 Reasul02.04 Reasul07.04/05 Reasul08.05
7C-3 Keep control over community representatives.	Rebea01.07/23 Rebea03.19 Rebea05.06/12 Rebea06.07/11/13 Rebea07.03/07 Rebea09.02/11 Rebea10.04/08 Rebea13.06 Rebea14.16 Remtea01.24/33 Remtea08.14 Remtea11.19	Repea01.13/14 Repea04.10 Repea06.03/08 Repea10.04/05 Repea11.17	Remtea01.05/29 Remtea02.01/10 Remtea04.12/13 Remtea07.17 Remtea08.12/14/18 Remtea10.18/20 Remtea14.04	Reasul01.23 Reasul03.06 Reasul04.09/10 Reasul05.02 Reasul06.04 Reasul07.18 Reasul12.04 Reasul15.05

The tactics related to the *standard operating procedures* have the objective of reinforcing the segregation of decision-making processes. Tactic 7C-1, *keep a segregated discussion list for leadership members*, is a natural consequence of having segregated decision-making processes, as the management group needs a specific communication channel.

Tactic 7C-2, *keep control over community gatekeepers*, means that leadership members should sanction moderators and facilitators. These gatekeepers are not chosen by ordinary members. Furthermore, in the studied communities, moderators and facilitators are also part of the management group. Moderators enforce the netiquette (issues that may be discussed, and the kind of behaviour that is acceptable in Internet-mediated discussion) and solve conflicts. Facilitators motivate debate.

Furthermore, through tactic 7C-3, *keep control over community representatives*, the management group dominates the community interface with society, as leadership members choose who represents the collectivity. Usually, it is the executive secretary (or coordinator), or someone close to the core leadership group, who assumes this interface. As explained by Rebea14.16, the leaders choose one member to represent the community among their peers, not including the whole community. In Remtea, for instance, the previous executive secretary, a core leadership member, chose the new one, recommendation that was accepted by other management members (Remtea01.29).

One example of the strength of the referred carrier and the associated tactics is an episode with Rebea, related to its community on Orkut[21] (Google's online social network). The community Rebea on Orkut was created in November 2004 by a person who was not formally a community member (at that time, although she was invited afterwards, when the 'official' Rebea discovered the existence of such an 'independent' branch on Orkut). This person had listened to a seminar, in which Rebea leaders proposed the ideals of a network organization, and, inspired by this speech, she created a community called Rebea in Orkut. She understood that she had enough sense of belonging to take the initiative of diffusing Rebea through other Internet-mediated spaces, although she was not formally a member.

Soon after Rebea's management members starting to interact with this other community branch, the original social structure of Orkut was changed (see more on Orkut case in subsection 6.1.10). When Rebea's executive secretary contacted Orkut moderators, she

[21] Citations: Rebea01.07; Rebea05.02; Rebea06.11; Rebea07.25; Rebea11.10.

suggested demanding previous approval of membership (copying the model on the discussion lists). This is a step in the centralization of decision making, as originally the community on Orkut was open to anyone without approval. The moderators on Orkut thus started to discuss the process and reasons for such a change in their open forums, in which all members may participate.

However, immediately after beginning this conversation, Rebea leaders transferred the debate to their private emails, including only a few Orkut moderators. In changing the channel, the majority of Orkut members were no longer able to follow the debate (nor were other Rebea members on the general or segregated discussion lists). Indeed, they did not participate in the final decision, which was to filter new members, as suggested by Rebea's executive secretary.

This is an interesting case because the social structure of Rebea on Orkut was open, supposing the participation of all members in the debate, but this structure was substituted by the standard procedure of limiting decision-making processes to the leadership group, when the discussions migrated to private emails. Furthermore, the presence of a gatekeeper to decide who may be a member on Orkut is also an instance of centralization in decision making, as some members have the special status of gatekeepers, and other members are not consulted about the acceptance or rejection of new members.

6.1.8. Normative routines

Jobs and roles (carrier 8A-1) imply members behave in the community following the scripts related to their positions in society, which is an expected procedure considering that members are not anonymous in these communities. In function of jobs and roles, members may accept in the informal relations the same subordination they accept in the formal interactions, thus reinforcing the possibility of having centralized decision making.

Table 6.15

Arguments	Rebea	Repea	Remtea	Reasul
8B-1 People fear losing their jobs or closing the door to future professional opportunities.	Rebea01.26 Rebea03.25 Rebea11.26	Repea01.03 /23/26 Repea02.20	Remtea02.21 Remtea07.10/20 Remtea08.15/16	Reasul07.10 Reasul13.08 Reasul14.12
8B-2 People have commitment with their current jobs.	Rebea02.12 Rebea03.25 Rebea13.02	Repea01.24/26 Repea02.16 Repea11.21	Remtea08.15/16 Remtea11.10	Reasul07.05

The arguments in this group try to explain that people cannot practice their opinions freely in the communities. In similar fashion of argument 6B-1 (*people are the same inside and outside the community*), the arguments 8B-1, that *people fear losing their jobs or closing the door to future professional opportunities*, and 8B-2, that *people have commitment with their current jobs*, recall the commonsense idea that people in Internet-mediated environments repeat their offline scripts, at least in this specific context in which members are not anonymous.

The most straightforward argument is that people fear losing their jobs (8B-1). For Rebea11.26, people constrain their arguments when in discussion with bosses and other people that they have professional interests, cultivating subordination. Or as explained by Rebea03.25, if one belongs to an institution, one should say what it is convenient to say. Others identify that some are indeed committed to their jobs (8B-2), thus it is a matter of identity and not simple coercion. For instance, government officials participate in the studied communities to distribute information and talk about their work (Repea01.03).

Table 6.16

Tactics	Rebea	Repea	Remtea	Reasul
8C-1 Keep in the community a posture which is adequate to the roles and jobs one has in society.	Rebea01.01/26 Rebea02.12 Rebea03.25 Rebea13.02/04 /05 Remtea11.10	Repea01.02/03 /22/24 Repea02.16/20 Repea11.21	Remtea02.21 Remtea04.05 Remtea07.10/20 Remtea08.15/16 Remtea11.10 Remtea12.03	Reasul07.10 Reasul13.08 Reasul14.12

Tactic 8C-1, *keep in the community a posture which is adequate to the roles and jobs one has in society*, is an obvious defence mechanism. For instance, in community interactions, members remain subordinated to their bosses, or to people who could be future bosses or employers. Remtea08.15/16 gives the example that a student has more freedom of expression in the community than a government official. Sometimes, the convenience of keeping an adequate posture appears as silence, i.e. members avoid exposing their opinion in sensitive themes (Reasul14.12).

6.1.9. Cultural-cognitive routines

Scripts (carrier 9A-1) imply that some titles such as executive secretary, coordinator, moderator and facilitator influence how members understand the role of those who occupy these positions in the community. The use of such titles reinforces the idea that some members are legitimate as leaders and decision-makers.

Table 6.17

Arguments	Rebea	Repea	Remtea	Reasul
9B-1 If a member has a role, this means something; otherwise there is no reason to give titles.	Rebea01.04 Rebea02.09 Rebea14.04 Rebea11.14	Repea01.13 Repea08.04/11 14/16 Repea09.06	Remtea02.15 Remtea06.11 Remtea04.07 Remtea07.15 Remtea08.05 Remtea10.08 Remtea13.04	Reasul11.11 Reasul13.01/05

Argument 9B-1 derives directly from the taken-for-granted character of scripts: *if a member has a role, this means something; otherwise there is no reason to give titles*. This is simple and powerful, because in spite of saying that all members are equal, the community has distributed titles, which means that in practice members are not equal. The argument does not undermine the idea of a network organization. It only recognizes a given fact.

Table 6.18

Tactics	Rebea	Repea	Remtea	Reasul
9C-1 Centralize the representation of the community in the executive secretary (or coordinator).	Rebea01.07 Rebea03.19 Rebea05.06 Rebea06.07/13 Rebea07.07 Rebea09.02 Rebea13.13 Rebea14.16 Remtea11.19	Repea01.13/14 Repea03.12 Repea04.10 Repea05.03 Repea06.08 Repea07.07 Repea08.11/14 Repea10.04 Repea11.07/17	Remtea01.06 Remtea02.05 Remtea04.12 Remtea06.27 Remtea07.17 Remtea10.18 Remtea14.03	Reasul01.24 Reasul02.05 Reasul03.06 Reasul04.10 Reasul05.02 Reasul06.04 Reasul07.18 Reasul09.09 Reasul12.04 Reasul13.02
9C-2 Reinforce respect for the role of executive secretary by blocking ordinary members from representing the community or taking decisions.	Rebea02.11 Rebea03.22 /23/24 Rebea06.07 Rebea14.16/18	Repea01.21 Repea03.12 Repea04.08	Remtea01.05 /06/07 Remtea02.15 Remtea04.13 Remtea05.04 Remtea06.17 Remtea07.13/14 Remtea08.12 Remtea13.02/03	[Not available]
9C-3 Respect the role of the executive secretary (or coordinator) and moderators.	Rebea01.04/08 Rebea03.22 /23/24 Rebea05.01/02 Rebea06.12 Rebea09.02 Rebea11.06 /09/11 Rebea13.19 Rebea14.20/21 Rebea16.13 Remtea11.20	Repea01.09/10 Repea02.06 Repea03.03/06 Repea04.05/17 Repea06.08 Repea08.08/09 /14/22/30 Repea10.04	Remtea02.06 07/12/15/24 Remtea03.03 Remtea04.06/14 Remtea06.11/18 Remtea07.11/15 Remtea08.05/13 Remtea10.03/08 /09 Remtea11.20 Remtea13.13 Remtea14.02/07	Reasul01.05 /09/26 Reasul02.02/07 /12 Reasul03.03 Reasul04.07 Reasul07.01 /04/05 Reasul09.09 Reasul10.10 Reasul11.11 Reasul12.07/09 Reasul13.01/02 /05/11

The tactics in this category are related to how the management group and ordinary members act to legitimise those who are in positions such as an executive secretary and a moderator. Tactic 9C-1, *centralize the representation of the community in the executive secretary (or coordinator)*, reinforces the feeling that the scripts 'executive secretary' and 'coordinator' mean something (thus it is also possible to link this tactic with *societal* and *members' expectations*, carriers 2A-1 and 2A-2).

Tactic 9C-2, *reinforce respect for the role of executive secretary by blocking ordinary members from representing the community or taking decisions*, is more coercive.

Rebea02.11, a former leadership member, relates that once she represented the community on her own decision, which created discomfort with the executive secretary, who questioned the respondent's behaviour as not respecting her role. Remtea01.05, a leadership member, argues for instance against permitting a person who 'nobody knows' (*sic*) to represent the community.

Tactic 9C-3, *respect the role of the executive secretary (or coordinator) and moderators,* cannot be ignored. In general, members respect the role of the executive secretary and moderators. Indeed, members legitimise the executive secretary, either when they keep a subordinated attitude in relation to his or her orientations (Rebea06.12; Rebea11.06/09/11), or when they simply fail to do otherwise[22]. As argued by Remtea11.20, members can react against being represented by the executive secretary, representing the community without asking permission from anybody. But when one reports the representation to the executive secretary, one is legitimising her role as the community representative, completes the respondent.

The respondent Rebea03.22/23/24 (ordinary member), for instance, asked the executive secretary's permission to start a new activity with other community members. She admits that considering the principles of a network organization, she should have asked the general list (all members), not the executive secretary. Furthermore, the executive secretary gave suggestions on how to manage the activity, and the respondent followed these suggestions straightforwardly, as her understanding was that they were in fact orders to be followed. Also when Rebea's executive secretary approached the Rebea's moderator on Orkut (see case in subsection 6.1.7), the moderator immediately offered to delegate all her powers to the executive secretary (although this has not been demanded). The moderator feared that something had been disrespected as the executive secretary had not been previously consulted about the community on Orkut (Rebea06.12; Rebea11.06).

[22] Citations: Remtea02.06; Remtea07.11; Remtea10.08; Reasul01.05; Reasul02.07; Reasul03.03; Reasul09.09; and Reasul10.10.

6.1.10. Regulative artefacts

In this thesis, two *objects complying with specifications* are identified as carriers (10A-1) of centralized decision-making processes: websites and discussion lists. These tools have technical features which permit some members to appropriate the control of these channels, favouring centralization of decision making.

Table 6.19

Arguments	Rebea	Repea	Remtea	Reasul
10B-1 Members do not know how to use Internet tools, thus the difficulty of appropriating alternatives.	Rebea01.05/07 Rebea06.03 Rebea07.10/11/24	Repea02.19 Repea04.26 Repea08.26	Remtea01.08 Remtea06.19	Reasul01.18 Reasul02.01 Reasul05.16

When questioned why the community is not using other Internet applications, such as forums, Wiki, blogs and web-polls, respondents argue that *members do not know how to use Internet tools, thus the difficulty of appropriating alternatives* (10B-1). For Rebea01.05/07, for instance, the discussion lists are not convenient for doing complex work, but it is not possible to adopt other tools because people lack digital literacy. Rebea06.03 adds that there is resistance to using Internet tools, such as forums, chats and web-polls. Rebea07.11/24 and Reasul01.18 relate that the communities tried forums, but members did not adhere to them. Repea02.19 also reports that the community tried to use chat-rooms, but they had fewer members in this online meeting than in face-to-face ones.

Curiously, nonetheless, in November 2004, Rebea was literally forced to adopt a new tool, the Orkut (see case in subsection 6.1.7). On that occasion, a person created a community on Orkut, in the name of Rebea. This Orkut community attracted many participants, most of whom were not members of Rebea's discussion list (Rebea07.24). After this[23], Rebea's executive secretary has contacted the person who had created the community on Orkut, in order to formalize the link between both 'Rebeas' (the traditional

[23] Respondents were not able to specify when the traditional Rebea contacted the Rebea community on Orkut. The first message from Rebea's executive secretary on Orkut was posted in January 2005.

one and the new one on Orkut). This case shows that there was a previous facility for Internet users to join Orkut, and that this facility was not appropriated by Rebea's leadership before it became a given fact (at a certain moment, Rebea had more members on Orkut than on the general discussion list, says Rebea06.11).

It appears that argument 10B-1 has a level of rhetoric, even considering that in practice many people face e-literacy challenges. Observe for instance the reasoning of Remtea01.08, explaining why the community does not use web-polls to choose who goes to a course in the name of the collectivity, instead of the formation of consensus (as defined in tactics 3C-1B, 3C-1C and 3C-1D, subsection 6.1.3). The leader straightforwardly remembered that members do not use web-polls because they do not want to openly reveal their vote. I put two arguments to her during the interview. Firstly, anonymity is possible as web-polls can protect the identity of the voter. Secondly, the current process on the discussion lists is absolutely not anonymous, which effectively exposes one's vote.

Questioned about her contradictory explanation, considering these two arguments, the respondent changed the answer, concluding that thus it is not necessary to use the suggested tool, as the current practice of consensus offers the same outcomes. Their practice of consensus, nonetheless, is not related to counting votes (see subsection 6.1.3), a feature that is embedded in web-polls. More directly, questioned also about the web-polls, Remtea06.19 (a leadership member) says first that members do not know how to use the tool, and second that the management group is not in favour of this application because they do not want to quantify votes.

The question about the appropriation of other tools aims to understand the reasons why the community has not added communication channels which could foster less centralized decision-making structures. It is not claimed here that the simple adoption of such alternatives would decentralize the decision-making processes. As discussed in subsection 5.2.11, the conventions about how to use the tool are as important as the tool itself. However, some tools are user friendly and designed to foster collaborative work as

well as participation, as far as people can manifest themselves directly without any kind of moderation. For instance, web-polls would permit members to manifest their opinions anonymously through votes, without the moderation of a person who interprets the consensus. Blogs could give greater autonomy to members, who would also be accountable for the content that they publish. The point here is not to be exhaustive of the possibilities, but to explore why other tools, that are available for free on the Internet, have not been included in communities' communication channels.

Table 6.20

Tactics	Rebea	Repea	Remtea	Reasul
10C-1 Avoid Internet tools (other than the discussion list and the website*) that would foster transparency, participation and less centralized decision-making processes. * *Exception for Rebea: Orkut*	Rebea01.07/20/21 Rebea02.15 Rebea06.03 Rebea07.10/11 /20/24 Rebea11.04 Rebea14.13/24 Rebea16.18 Rebea17.12/13	Repea01.16/18/19 Repea02.06/07/08 Repea07.08 Repea09.15/16	Remtea02.22 Remtea01.08 Remtea06.19	Reasul01.18

Tactic 10C-1, *avoid Internet tools (other than the discussion list and the website) that would foster transparency, participation and less centralized decision-making processes*, means that management groups give preference to channels that permit them to keep greater control on the community communication. For instance, Repea09.15/16 recognizes that there are more collaborative Internet tools (Wiki, forums, e-learning systems, web-polls, aggregated blogs etc.) which permit groups to create their own spaces, without the coordination of a group, which could empower ordinary members in relation to the leadership members. Indeed, some community leaders are knowledgeable about Internet tools. Furthermore, many members are concerned that other tools should be adopted by the communities[24] (mainly in Rebea), but the adoption has not yet gained momentum.

[24] Citations: Rebea01.20; Rebea02.05/15; Rebea03.19; Rebea05.07; Rebea06.03/19; Rebea07.10; Rebea14.24; Rebea16.09; Rebea17.04/09; Repea01.16; Repea02.08; Repea08.26; Repea09.15/16; Remtea07.20; Reasul01.19/28.

One exception in relation to this tactic is the adoption of Orkut by Rebea. As explained above (and in subsection 6.1.7), this adoption was not an initiative from Rebea's leadership. Also, during the interviews, few members cited the case of Orkut, and most of them were not aware of the details either of how the Orkut had been customized (the rules of moderation and membership, for instance), or about the kind of content and functionalities that the space offers. In sum, the majority of respondents were not familiar with the tool at the time of the interviews (between April and June 2006). Thus this research cannot go further in the analysis of this tool in the context of its objectives. In addition, there was not any indication that this application has changed decision-making processes in Rebea. Indeed, it is the other way around, as Rebea's leaders changed the more open decision-making processes on Orkut (as discussed in subsection 6.1.7).

6.1.11. Normative artefacts

Considering *objects meeting conventions and standards* (carrier 11A-1), this thesis analysed both tools: websites and discussion lists, as they are customized in a standardized way in order to keep the control of these channels by leadership groups.

Table 6.21

Arguments	Rebea	Repea	Remtea	Reasul
11B-1 It is necessary to control the quality of content on websites and discussion lists.	Rebea01.02/05/22 Rebea14.23 Rebea05.01/02 Rebea08.12 Rebea14.21 Rebea16.13/18	Repea01.09/17/18 Repea02.06/08/09 Repea03.02/03/14 Repea07.08 Repea08.25 Rebea11.14	Remtea01.10 Remtea04.03/13 Remtea10.02/16 Remtea13.14	Reasul02.04/15 Reasul03.10 Reasul04.05 Reasul09.05 Reasul10.07/19 Reasul13.01
11B-2 Members do not know how to use such tools in a more flexible way.	Rebea01.05/21/22 Rebea03.24 Rebea06.03 Rebea07.10	Repea01.16/17/18 /20 Repea02.07/09 Repea03.04/07 Repea04.19 Repea08.07/12	Remtea02.22/26 Remtea09.04 Remtea13.14	Reasul01.10/19 Reasul02.01/04/15 Reasul05.10 Reasul09.02 Reasul10.07

The arguments in this group try to legitimise the control of the Internet channels in the hands of the leadership group. Respondents understand that *it is necessary to control the quality of content on websites and discussion lists* (11B-1), which includes censuring people who assume an offensive attitude on general lists. Repea07.08 argues the collective cannot be responsible for inadequate content on the website (implying that the leadership group would not publish inadequate content). Repea02.09 clarifies that when the site was designed, consultants oriented them to adopt the standard of demanding validation from the executive secretary to avoid inadequate content on the site.

Members of Reasul for instance recall that there was a crisis on the general list because of an Internet virus (Reasul02.04; Reasul03.10; Reasul10.07). In order to avoid this kind of disturbance, the list has been moderated since. It is the only list in the studied communities in which the messages are moderated. The others have moderation of the list, i.e. the moderators may interfere afterwards, but members have freedom of expression and can communicate to others directly. In Reasul, the customization, in practice, has transformed its general list into a channel for news bulletins, as members can only participate through the moderator.

Argument 11B-1 undermines the notion of a network organization in which everybody has the same right of expression. In validating the gatekeepers for the website, content may be biased to favour specific interests. In practice, the community could manage the issues of quality and behaviour through other structures, without centralizing these controlling procedures in the leadership group (as discussed in subsection 6.1.10). However, in maintaining moderators with special power over the discussion list, members can be censured or expelled (as explained in tactic 6C-4).

Furthermore, respondents argue that *members do not know how to use such tools in a more flexible way* (11B-2). This argument is cited mainly to explain why the community does not open the publishing of content on the website to more members. Repea01.20, for instance, defends the fact that the leadership group has not distributed passwords to other

members because this would demand a lot of training, and management members do not have time for that task.

In relation to this argument, it is necessary to point out that there are members who understand that the standardized customization is imposed by the software, as they do not understand the flexibility of the tool[25]. For the respondent Repea03.07, for instance, someone configured the discussion list at the beginning, and he does not know if other configurations would be possible. In these cases, the standardized way is taken for granted as the only way, as the respondent does not grasp the flexibility embedded in the tools.

Table 6.22

Tactics	Rebea	Repea	Remtea	Reasul
11C-1 Avoid customizing websites and discussion lists in a more flexible way.	Rebea01.20/21 Rebea06.03 Rebea07.11/20 Rebea11.04 Rebea14.13/24	Repea01.16/18 Repea02.06/07 Repea03.07 Repea04.19 Repea07.08 Repea08.25 Repea09.12/16 Repea11.13	Remtea01.10 Remtea02.24 Remtea04.03/13	Reasul01.09 Reasul02.01/15 Reasul05.02 Reasul09.02/05 Reasul10.07/18 Reasul14.03

Tactic 11C-1, *avoid customizing websites and discussion lists in a more flexible way*, means in practice that leadership groups do not empower ordinary members in their communities in relation to Internet-mediated interactive channels. In hierarchical organizations, with management groups, one can assume that leadership members would keep control over these channels. The studied communities keep following the same model, as alternative customizations are not considered, although the tools permit a greater level of flexibility. The carrier is thus the standardized, conventional customization of tools (originally), and the tactic is the inertia[26] of keeping active the instruments of control through the standardized customization (see in subsection 7.1.11 the differences between cases in relation to customization).

[25] Citations: Rebea03.24; Repea02.09; Repea03.04; Repea04.19; Reasul01.10.

[26] At any moment, one can customize the tools differently.

Although it is not the focus of this subsection to discuss Rebea community on Orkut, it is important to highlight also how the tool features have been customized to favour centralization of decision making. As discussed in subsection 6.1.7, the community started on Orkut in an open format, allowing any person to be a member. After the coordination with Rebea leadership, however, the community on Orkut was closed, and membership has become subject to approval. Moderators may now exclude members. Thus, again, the flexibility of the tool has been used to promote centralization of decision making.

6.1.12. Cultural-cognitive artefacts

Members of the four communities argue that Internet tools are less efficient than face-to-face interaction in communication processes. Considering the adopted framework, this perception is classified as *objects possessing symbolic value* (carrier 12A-1). In a nutshell, this carrier undermines the general list as a space for making decisions, which indirectly reinforces the centralization of decision making, as ordinary members have less access to face-to-face meetings, and none access to segregated discussion lists.

Table 6.23

Arguments	Rebea	Repea	Remtea	Reasul
12B-1 Face-to-face meetings are more relevant for the community than the discussion lists.	Rebea03.02 Rebea06.01/02/03/19 Rebea07.24 Rebea08.05 Rebea10.05 Rebea13.15/18 Rebea16.04 Remtea01.25	Repea02.02/04/19 Repea08.12	Remtea01.06/17 Remtea02.11 Remtea04.06 Remtea05.02 Remtea06.13 Remtea07.16 Remtea08.06 Remtea10.15 Remtea13.12	Reasul01.18/27 Reasul02.20 Reasul03.05 Reasul04.03/11 Reasul06.04 Reasul08.02 Reasul09.17 Reasul10.21
12B-2 Restricting the communication to virtual channels would exclude people who do not have access to the Internet.	Rebea02.02 Rebea04.03 Rebea06.03	Repea07.10	Remtea08.07 Remtea10.02 Remtea13.09	Reasul07.01 Reasul10.15 Reasul10.24

Argument 12B-1 is a reformulation of the same symbolic value of the respective carrier: *face-to-face meetings are more relevant for the community than the discussion lists.* It happens in this case because the carrier itself is an argument, formulated as value. The idea here is to emphasise the relevance of face-to-face meetings, even though they are not frequent and most of the interactions are through the Internet. Comparing the Internet interaction with the face-to-face meetings, Rebea06.01/02 concludes that in quantitative terms, communication is mainly through the Internet, but in qualitative terms, the level of commitment is higher in face-to-face meetings. For Rebea08.05, Rebea10.05, Remtea06.13 and Remtea13.12, in the virtual space, information overload demotivates people from deepening the debate. Furthermore, respondents highlight that people only commit themselves to the communities after creating emotional links in face-to-face meetings[27].

Argument 12B-2, *restricting the communication to virtual channels would exclude people who do not have access to the Internet*, links the symbolic value with the idea of digital exclusion. In other words, it would not be fair to restrict the communication channels only to the Internet as many people (in Brazil) do not have access to this network. This argument would be valid if more people were engaged in the face-to-face meetings, but it is the other way around, at least when considering that the studied communities have members dispersed across large areas.

As the Internet interaction is the cheapest communication channel, the demand for face-to-face meetings excludes more people from decision making, as many cannot afford the costs of transportation and lodging. As related by Rebea02.02, her community only integrated the Internet in 1999, because there was a fear that the Internet was elitist, excluding many people. However, in the event the telephone and the fax were no longer sufficient to keep the communication exchanges, thus the need to add the virtual channels was evident.

[27] Citations: Rebea06.03; Remtea01.17; Remtea04.06; Remtea05.02; Remtea07.16; Repea02.04; Reasul02.20; Reasul03.05; Reasul04.03/11; Reasul06.04; Reasul08.02; Reasul09.17.

Table 6.24

Tactics	Rebea	Repea	Remtea	Reasul
12C-1 Make relevant decisions in face-to-face meetings.	Rebea03.02 Rebea06.01/18 Rebea08.02/03 /08/10 Rebea16.15 Repea06.13	Repea01.06 Repea02.02/04 /10/19 Repea06.13 Repea08.13/24 Repea11.05/06	Remtea01.04/17 Remtea02.11 Remtea04.06 Remtea06.13 Remtea08.06	Reasul01.18 /20/27 Reasul11.05

The tactic associated with carrier 12A-1 is the action of *making relevant decisions in face-to-face meetings* (12C-1). The choice of the executive secretary in Rebea, for instance, is articulated in the Internet, but its validation is in face-to-face meetings[28]. In Repea, members only qualify for the management group if they go to face-to-face meetings[29], and relevant decisions are preferentially made in offline interaction. In Remtea, the official rule is that members only influence the decisions if they participate in face-to-face interaction, also in the sense of being actively engaged as activists of the community as a social movement[30]. These are also the minimum requirements if a person wants to join Remtea's management group (see further citations in tactic 4C-1C in subsection 6.1.4). In Reasul, at least during the funded project, the community favoured making decisions in face-to-face meetings, because the government was sponsoring members (Reasul11.05) (see further discussion on Reasul case in subsection 7.1.12).

Tactic 12C-1 thus reinforces the symbolic value attributed to the Internet tools: as they are not efficient communication channels, the community should make decisions in face-to-face meetings. Consequently, those that attend the face-to-face meetings may become legitimate leadership members, thus having more power in decision-making processes.

The examples above, nonetheless, are in practice localized and represent a small proportion of decisions in these communities, as a general rule (although Remtea has special conditions as explained below). In table 5Y, many examples are cited in which

[28] Citations: Rebea08.02/03/08; Rebea16.15; Repea06.13.

[29] Citations: Repea01.06; Repea02.02; Repea11.05.

[30] Citations: Remtea01.04/17; Remtea02.11; Remtea04.06; Remtea06.13; Remtea08.06.

members admit the existence of a segregated list as the main channel for decision making.

Rebea, for instance, formally has an official face-to-face meeting only every two years. After a national event in 1997, the community were supposed to meet again in 1999, but this face-to-face conference was delayed to 2004 (Rebea06.01). The community did not have any formal offline meeting during these seven years (although members met together at different moments for other reasons than this formal national meeting). Meanwhile, during these seven years the decisions were concentrated on the segregated discussion list. In Repea, at the time of the interviews, face-to-face meetings were organized every two months, mainly in São Paulo (Repea08.13/24). In Reasul, the community can no longer support these meetings, after the end of the funded project. Thus, to date, the majority of interactions among Reasul members are on the segregated discussion list, according to one of the main community leaders (Reasul01.18/20/26).

The situation in Remtea is different because the majority of management members work together in the same building, thus naturally they do not have great obstacles to talking with each other daily without using the Internet. Even in this condition, Remtea keeps a segregated list for the management group and makes decisions through this channel as well, as discussed in many parts of this chapter (see citations on these practices in tables 5Y and 6.14).

In conclusion, tactic 12C-1 also has a rhetorical element. Some decisions are indeed made only in face-to-face meetings, but often relevant decisions are made on the segregated discussion lists. Thus the tactic creates an appearance that relevant decisions should be made in face-to-face meetings, legitimising the decisions made in these meetings and for members that attend these events, although in practice the segregated discussion lists keep their relevance as a channel for decision making.

6.2. Concluding remarks on findings II

This chapter explores how the analytical constructs, *arguments* and *tactics*, may be associated to Scott's (2001) categories on institutional *carriers*. As detailed in each category, carriers are associated with arguments, which aim to justify the influence of social structures in community contexts, and tactics, which reproduce (and change) centralized decision-making structures in specific situations.

This study links carriers with related arguments and tactics, indicating how the action of community members represents a crucial vehicle for embedding carriers in specific situations, thus emphasising the role of agency in the diffusion of institutions, as proposed by structuration theory (Giddens, 1979, 1984). The findings suggest that Scott's framework on carriers may benefit from this broader perception of other elements that are present in the reproduction of institutions, a theme discussed in chapter 8.

Starting from the presented findings and analysis (parts I and II), the next chapter contrasts the four cases studies, exploring their differences and similarities.

7. Cross-case analysis: Comparing communities

The two previous chapters present the main findings and analysis of this thesis considering the influence of institutional carriers in the diffusion of segregated decision-making processes in the studied Internet-mediated communities, and how community members actively engage in the situated reproduction of institutionalised social structures through the elaboration of arguments and tactics. This chapter introduces a complementary analysis, discussing the similarities and differences among the four case studies. The main objective of this cross-case analysis is to suggest possible associations between these differences and the context in these communities, where the empirical evidence supports such links.

As discussed below, the cases are very similar in most elements of each category. This result may be related to the fact that the chosen communities are homogenous in many respects. They all have clear boundaries, a common main interest, similar activities in Brazil, dependence on formal organizations and established decision-making processes. On the other hand, they differ in relation to main sponsors, the fact of having or not having received government funding and the level of dependence in relation to Internet channels (see subsections 1.4.2, 4.2.1 and 8.3.1 about communities' similarities and differences).

Much of the evidence presented below is also discussed in the previous chapters. There, the anecdotes from the interviews mainly serve the function of supporting the findings and analysis of each element of the categories – carriers, arguments and tactics. They thus help to understand how this research has constructed the categories, as interpretations emerge from interviews related to the four cases (Walsham, 1995a: 78-79). In this chapter, differently, data is organized to emphasise the comparison between cases, drawing upon the interpretation established in both previous chapters.

Section 7.1 discusses the cross-case analysis for each category[1] and section 7.2 summarizes the main conclusions of this cross-case analysis, calling for attention to the comparison of similarities and differences as a whole for the four case studies. Thus in the first section the focus is on each category and its elements (horizontal analysis), and in the second section the emphasis is on the cases as a whole (vertical analysis). These cross-case comparisons are also used in chapter 8, when theory is brought to analyse the main findings of this investigation.

The emphasis given in the cross-study analysis of each category depends on the effective differences between cases in that category. When the cases differ substantially, this demands more analysis to construct arguments that have not been developed before, in order to contextualize the diversity. When the cases are very similar, the main arguments of the categories have already been presented in previous chapters, thus it is not necessary to develop the same reasoning again.

The fact that some categories are more discussed than others does not imply any conclusion about their relevance in the studied phenomenon. This thesis does not develop any reasoning about the relative significance of each category and its elements in the diffusion of institutions. This research follows Scott's (2001) suggestion of understanding the whole set of categories as complementing each other. When differences related to cases appear, they are contextualized qualitatively, as far as there is empirical evidence for that.

As this chapter reworks previous findings, naturally there is a level of repetition in the construction of explanations. I prefer this format, with the risk of being reiterative, than taking for granted that the reader will automatically relate the analysis to the previous chapters. Thus some repetition is used when it is necessary to avoid fragmentation of reasoning.

[1] Recalling that in this research categories are the combination of institutional carriers, arguments and tactics, which is different from how Scott (2001) uses the term as only related to institutional carriers.

A last warning is necessary about comments on frequency of citations (as presented in the tables in chapters 5 and 6). As explained in the introduction of chapter 5, my concern about including the indication of citations is related to consistency of findings and interpretations (following Trauth, 1997, and Stake, 1994, 2000, among other scholars). I am not making any claim that difference in number of citations necessarily means something. As explained by Silverman (2000:184), counting in qualitative research should be used only when there is a theoretical rationale behind it, otherwise it only gives a spurious validity. However, looked at from another perspective, in some cases the empirical evidence suggests that the differences in the number of citations could be meaningful, permitting one or more interpretations based on the context in which the phenomenon was observed. In other circumstances, it is not possible to interpret whether the differences are relevant, as far as the collected data reveals, also considering the objectives of the present investigation.

Thus the occasional comments on frequency of citations in this chapter should be considered from the point of view of qualitative research which constructs inferences from the empirical data, in an attempt to understand the parts in relation to the whole (drawing upon the concept of hermeneutical circle, as introduced in subsection 4.1.1). An example may clarify this reasoning.

In table 6.20, tactic 10C-1 – *avoid Internet tools (other than the discussion list and the website) that would foster transparency, participation and less centralized decision-making processes* – is cited by eight Rebea members, and by one Reasul member only. Does it mean that Rebea avoids appropriating other Internet tools and Reasul does not avoid? No, it does not mean that. Both communities avoid the inclusion of Internet tools other than websites and discussion lists. Indeed, Rebea has taken one small step further than Reasul, in the use of Orkut (as explained in subsections 6.1.7 and 6.1.10). In such a situation, the empirical evidence does not support the idea that the differences in number of citations mean something in relation to the tactic itself, although the differences may result from the fact that Rebea members appear to be concerned about the appropriation of Internet tools. When empirical evidence suggests it, such links are spelled out, also

when more than one interpretation emerges from data. Otherwise, I do not comment on citation frequency.

7.1. Cross-case analysis by category

This section presents the cross-case analysis, comparing the differences and similarities between the four communities, in relation to each category and its elements (carriers, arguments and tactics). The analysis in this chapter keeps close adherence to the tables in the two previous chapters, but it also adds some other citations from interviews, as well as inferences from the interpretation of the collected data.

7.1.1. Regulative symbolic systems

The influence of the *legislation* (carrier 1A-1) is recognized by members of the three communities (Rebea, Repea and Reasul) which had received government funding. The kind of influence, nonetheless, is diverse in each community. In Reasul, its governance structure has been influenced by the legislation since its creation in April 2002, as the community was created because the federal government offered this funding (Reasul01.01/02; Reasul02.07). Reasul started with a clear segregation between the management group and other members, and the respective discussion lists, initiating a process of decentralization of decision making only after the end of the funded project.

Rebea and Repea, differently, have been active at least since 1992[2], and were influenced by the legislation later on, when they applied for the government funding (at the beginning of 2000s). On that occasion, Rebea created the role of executive secretary, and

[2] In this year, Brazilian civil society and social movements were mobilized to prepare the discussions and meetings for the ECO 92 (United Nations Conference on Environment and Development in Rio de Janeiro, Brazil).

Repea started to differentiate between nodes[3] (before, all nodes had the same status in the community). The three cases thus suggest that the legislation empowered some members in relation to others in decision-making processes.

In relation to arguments, members of the three communities had the same reasoning: that *the community needs to comply with legislation to receive government funding* (1B-1). The three communities also adopt the same tactics of *making the community's governance structure similar to the governance structure of the funded project* (1C-1), and *concentrating power and visibility in the anchor organization (and its representatives)* (1C-2).

In the case of Repea and Reasul, the anchor organizations have continued to be the main references (respectively the NGO 5 Elementos and the university Univali) after the end of the funded project. In Rebea, tactic 1C-2 was present during the funded project, but the anchor organization[4] was changed later, from Ecoar to Ecomarapendi[5] (Rebea01.06/13). The new anchor organization has the same role as the previous one, thus the segregated decision-making processes continue as before, although with new actors. Perhaps because of this change in leadership, Rebea members relate less often the legislation to the current concentration of power in Ecomarapendi, differently from members of Repea and Reasul.

[3] A node is an organized group which represents Repea in a specific locality (such as a region or city). A member can be called a node as far as he or she proposes to do such work alone.

[4] The communities call anchor organizations not only those that represent them in contracts with the government in terms of specific funding (FNMA), but also the organization that currently is responsible for representing the community's contracts in general. Thus the respective anchor organizations are (by June 2006): Ecomarapendi (NGO) for Rebea; 5 Elementos (NGO) for Repea; Universidade Federal de Mato Grosso (university) for Remtea; and Univali (university) for Reasul.

[5] Both non-governmental organizations.

7.1.2. Normative symbolic systems

Respondents of the four communities affirm the need to have formal representatives and leaderships to attend to *societal* and *members' expectations* (carriers 2A-1 and 2A-2). In Reasul (see subsection 7.1.1), nonetheless, the community has had a management group and formal representatives since its creation under the influence of the *legislation* (carrier 1A-1). This may have affected Reasul members' perception of the need to have formal representatives for reasons of social pressure, differently of Rebea's members, for instance.

The three related arguments (2B-1, 2B-2 and 2B-3) are also present in the four communities. They link the leadership group with activities such as voicing political demands, resolving conflicts and taking initiatives.

In relation to argument 2B-2, *it is necessary to have a group to resolve conflicts and reduce opportunistic behaviour among members*, Reasul respondents have reasons to be less concerned about conflicts because ordinary members cannot communicate through the general discussion list without the validation of a moderator. The perception of conflict is filtered by the moderator, at least on the general list. In the other communities, members express themselves without moderation, and occasional control is done later. Differently of Reasul, Remtea members had the experience of expelling a member in a very antagonistic situation (see subsection 6.1.6), which may explain the fact that in this community many respondents link the leadership members with the activity of resolving conflicts.

Referring to tactics, the four communities *conform to social expectations, keeping gatekeepers (moderators, facilitators) and formal representatives* (2C-1). There are, nonetheless, some particularities about Repea and Remtea. First, Repea formally gave up of having an executive secretary after the funded project ended (June 2004). Informally, nonetheless, the community maintains the previous executive secretary and another member from the anchor organization (5 Elementos) in the same roles in terms of

representing the community, moderating discussion lists, leading decisions and fundraising. For Repea02.11/12, Repea03.09 and Repea06.04, people report to these leaders because an alternative structure has not been created. This doubt about formal and informal roles, nonetheless, may have affected how Repea members perceive tactic 2C-1, as some members prefer the interpretation that the community does not have an executive secretary.

Second, in Remtea the main leader (an academic) represents the community and centralizes the decisions, although she does not have the formal title of 'executive secretary', which is shared by three other members. Indeed, the community previously had only one member in this role, but at the beginning of 2006 the new executive secretary invited other two members to share the same activities. At the time of the interviews (April/June 2006), they did not have enough experience to report how this model would work in practice. Nevertheless, members say that independently of formal titles, the main leader would keep her legitimacy in the community as its main representative[6].

7.1.3. Cultural-cognitive symbolic systems

Respondents of the four communities recognize the influence of *hierarchical schemas* (carrier 3A-1) in their social structures, which implies differentiation of power among members. In relation to arguments, the ideas that *it is difficult to manage the community without following a hierarchical model* (3B-1), and that *there are cognitive obstacles to creating a network organization in a hierarchical society* (3B-2) are also cited in the four communities.

[6] Remtea's main leader is recognized as an important academic in the field, thus her social status (see carrier *authority systems – status*, in subsection 5.2.5) seams to prevail over the script of 'executive secretary' (see carriers *scripts* in subsection 5.2.9). It is a peculiar case, which does not occur in the other studied communities.

In relation to the associated tactics, members of the four communities cite the practice of *making governance rules blurred and ambiguous* (3C-1). There are differences, nonetheless, in relation to specific tactics in this group, which may be related to contextual factors.

The tactic of *not informing ordinary members about the existence of a leadership group, and the segregation of discussion lists* (3C-1A), for instance, is present in Rebea, Repea and Remtea. In Remtea, nonetheless, the two citations related to this tactic are from ordinary members who did not know about the segregated discussion list. It suggests that perhaps the management members in this community could have interests in not exposing tactic 3C-1A to the researcher. As discussed in subsection 4.3.1, there are few results in this investigation that may be biased by the fact that the majority of respondents in some communities are from the management groups. In this case, the fact that two ordinary members have expressed clearly their unawareness about the segregated list indicates that the tacit is present also in Remtea. Tactic 3C-1A could not be present in Reasul, as ordinary members clearly are informed that they do not participate in community decisions, and their discussion list is not related to decision making.

The tactics of *calling consensus the agreement of a few members* (3C-1B), and of *not basing decisions on numbers of votes, but on the quality of arguments* (3C-1D) are present in all four communities. The tactic of *centralizing the process of defining the consensus (or closing the discussion) in the leadership group* (3C-1C), nonetheless, is more emphasised by Remtea members. Indeed, in this community, this activity of defining consensus is centralized in the main leader (the cited academic), who has a very strong presence in all community activities and decisions. These tactics are valid for both discussion lists, as also among management members there are different degrees of legitimacy in decision-making processes.

The tactic of *ignoring complaints against centralized structures, or questions related to accountability and transparency* (3C-2) is present in the four communities, but Rebea members appear more concerned with the theme. Indeed, Rebea members, including

some within the management group, often complain against segregated decision-making structures[7]. One reason could be that Rebea has members all around the country, who belong to other similar Internet-mediated communities. The heterogeneity of the management group could open space to more power disputes. For instance, four of Remtea's leadership members[8] complain about Rebea's centralized structures, although they support the same segregation of decision making in Remtea. Questioned about this divergence, none of them was able to explain the different criteria to judge Rebea's and Remtea's governance structures. The distribution of interviewees between management and ordinary members does not appear to be related to this greater number of citations in Rebea, as the majority of them came from management members[9].

7.1.4. Regulative relational systems

The *influence of sponsors* in the community governance structures, through *power systems* (carrier 4A-1) is recognized by members of the four communities. The differences among cases are related to the institutional status of sponsors (government, university or NGO), as they have diverse instruments to influence communities. The government has more channels to carry such an influence, from offering direct and indirect funding to inviting to meetings, contracting services and supporting publications. The *governance systems* (carrier 4A-2), differently, are present only in Remtea. This came because almost all members of Remtea's management group are also members of a

[7] Citations: Rebea01.08; Rebea06.16; Rebea07.15; Rebea14.17; Rebea16.06; Repea08.03; Remtea08.14; Remtea11.05/08; Reasul01.08; Reasul05.13. Recall that people have multiple-membership, thus they are members of Repea, Remtea and Reasul at the same time they are members of Rebea.

[8] Citations: Remtea01.23; Remtea02.18; Remtea11.05/08; Remtea14.03. As stated before, people have multiple-memberships. In the cited cases, these Remtea members are also associated to Rebea.

[9] From twelve citations, eight came from management members (Rebea01.07/10/15; Rebea09.17; Rebea16.11; Remtea01.23; Remtea02.18; Remtea11.05/08; Remtea14.03; Reasul01.08) and four from ordinary members (Rebea03.15/16; Rebea08.10; Rebea10.05; Reasul05.03/13).

research group (GPEA/UFMT[10]). Thus the governance structure of the research group prevails as the governance structure of the community.

In relation to arguments, the four communities cited them in a similar fashion, agreeing that *the sponsor has more power to define directions* (4B-1), *ordinary members are not interested in managing the community* (4B-2), and *some members concentrate decision-making processes because they are more active and committed than others* (4B-3). In relation to tactics, all communities *create obstacles for ordinary members joining the management group* (4C-1), such as *keeping unclear rules about the criteria for accepting members in the management group* (4C-1A), and *keeping some debates only among your peers in the management group* (4C-1B). There are, nonetheless, differences in relation to the other sub-tactics associated with this group.

The practice of *requiring members to attend face-to-face meetings to participate in the management group* (4C-1C) is pervasive only in Repea and Remtea. Some contextual aspects may explain this picture. Firstly, Rebea has members across the whole country. Thus it would be difficult for any sub-group to impose such a rule on other management members[11]. Secondly, the Reasul management group has people from three States. Again the costs of travelling would be overwhelming[12]. Thirdly, the management groups of Repea and Remtea are composed mainly of members who may meet without excessive costs in São Paulo and Cuibá (respectively), capitals of their States (São Paulo and Mato Grosso). The management groups in these two communities thus may use this requirement as a form of creating a barrier for the participation of people from other cities. For instance, in the monthly face-to-face meetings, Remtea has an average of 30

[10] Grupo Pesquisador em Educação Ambiental, Universidade Federal de Mato Grosso.

[11] Still Rebea members strongly emphasise the relevance of face-to-face meetings (see carrier 12A-1), although in practice the vast majority of community communication goes through the Internet.

[12] During the funded project, Reasul management members were sponsored to attend face-to-face meetings. At that time, the management group was very restricted (only 5 institutions were represented) (Reasul01.09). Since the end of the funded project, the management group has accepted more members (at the time of the interviews, 29 institutions were represented) (Reasul01.09), and the demand for face-to-face meetings has no longer been made.

members, and the majority of these members are from the management group (which has 25 participants) (Remtea01.17).

The tactic of *undermining the legitimacy of ordinary members as potential leaders* (4C-1D) is present in the four communities, but it is cited only once by Reasul members, which in this case may mean something. In Reasul, ordinary members are clearly excluded from decisions[13] and their participation on the discussion list is moderated. In this context, ordinary members either do not try to legitimise themselves as leaders, thus it is not necessary to apply such a tactic, or their manifestations are ignored (filtered). The empirical evidence is not clear about the reason, but it suggests that Reasul leaders do not have the same concern about undermining the legitimacy of ordinary members, as they apparently do not face the same level of conflict with them[14].

The tactic of *avoiding conflict with and criticisms of sponsors* (4C-2) is present in the four communities. Rebea members pay special attention on this practice, perhaps because the federal government has many channels of influence upon its members (support of face-to-face meetings, EA.Net television channel, meetings with the government, courses, jobs and publications). Thus more members could be clear that they strategically avoid conflict with the government. Furthermore, tactic 4C-2 may be cited more often by Rebea members considering the empirical evidence related to tactic 4C-3, of *excluding from debate within the management group those who do not agree with the leadership*

[13] As commented in subsection 6.1.3, in relation to tactic 3C-1A, that is not applicable to Reasul as ordinary members clearly are informed that they do not participate in decision making.

[14] See two other complementary references on this theme. In relation to argument 2B-2, subsection 7.1.2, Reasul respondents appear less concerned about conflict among members when discussing the role of gatekeepers and representatives. In relation to tactic 9C-2, subsection 7.1.9, respondents do not relate cases in each Reasul leaders have blocked ordinary members from representing the community. It does not mean, nonetheless, that ordinary members have represented the community (there are no citations in this direction). The emphasis in the analysis is that respondents have not related this kind of conflict, either because ordinary members have not challenged Reasul leadership, or because Reasul respondents have not informed such a conflict. See more details in the referred subsections.

orientation (4C-3), which is cited only by Rebea members. Most citations[15] of tactic 4C-3 referred mainly (but not only) to the recent exclusion of one main leader from discussions, after her opposition to the federal government.

Combining both tactics (4C-2 and 4C-3), it appears that Rebea members have great concern about criticizing the federal government, and are aware that criticisms could result in punishment, perhaps because of this specific event in which a core management members was recently excluded from the leadership group. The citations related to both tactics do not appear to be skewed because there are more ordinary members among Rebea respondents than in the other communities, which have more management members. Indeed, Rebea's management members appear concerned with these tactics because they are also affected by them.

For instance, in relation to tactic 4C-2, ten members cited the practice related to Rebea[16], and five of them are from the leadership group. In relation to tactic 4C-3, six members cited the practice, and four of them are from the leadership group. The ordinary members who cited as well tactic 4C-3 are one former leader, who was excluded from the management group without further justification[17], and one member that was in the community for eight years (at the time of the interviews), having great knowledge about the politics related to power dispute among management members.

7.1.5. Normative relational systems

In relation to *authority systems*, the idea that *status* (reputation and legitimacy) in society is translated into power within the communities (carrier 5A-1), and that the *government influence* affects the perception of legitimacy in these communities (carrier 5A-2) are

[15] Citations: Rebea01.14/16; Rebea04.03/04/07; Rebea13.14/15; Repea01.25; Repea02.21.

[16] Repea02, Reasul05 and Reasul14 are also Rebea members.

[17] This exclusion does not refer to the recent exclusion cited by other members. The case of this former leader was cited only by the own respondent.

recognized by members of the four communities. The cases are also similar in relation to arguments 5B-1, *some people have more authority in the environmental education field, justifying that they have greater legitimacy in the community*, and 5B-2, *older members have created the community (or worked more), thus they have more legitimacy to make decisions*.

In this category, some differences among the cases emerge in the analysis of tactics. The practice of *organizing leadership peers to give support to each other on the general discussion list* (5C-1) is pervasive only in Rebea and Remtea. In Reasul, ordinary members do not participate in decisions at all, and the general discussion list is moderated. Thus it makes sense that community leaders do not feel the need of a parallel agreement to legitimise their suggestions in front of ordinary members. In Repea, nonetheless, it is not possible to associate the omission of this practice with contextual aspects, considering the empirical evidence.

Here, one could speculate that this omission is a research bias caused by the fact that the majority of Repea respondents are management members. However, the same practice is cited by Remtea interviewees, which also have more management members among its respondents. Furthermore, Repea's management members openly related other sensitive practices, such as of *not informing ordinary members about the existence of a leadership group, and the segregation of discussion lists* (3C-1A). Thus it is not clear, considering the whole research, whether this omission is a biased result. As discussed in subsection 4.3.4 (interview guide), the questions proposed to interviewees were very open, requiring people to talk about their governance practices and decision making processes. Thus respondents have spontaneously recalled the processes they consider important, and perhaps this omission means only this: the practice is not relevant in this community.

Respondents from the four communities recognize the tactic of *flaming members who do not agree with the leadership orientation* (5C-2), although in Reasul this tactic may be less relevant as ordinary members are moderated, thus occasional verbal attacks become public only on the segregated discussion list. The tactic of *setting the agenda, occupying*

the discussion list with the themes the leadership considers relevant (5C-3) is also present in the four communities. The strong influence of the federal government in Rebea (discussed in subsection 7.1.4) may explain the fact that Rebea members emphasise the external influences in their debates. It is interesting to notice that both leaders and ordinary members recognize this practice in Rebea[18].

The last two tactics of *ignoring the contributions and opinions of members* (5C-4) and *keep silent for not having legitimate knowledge* (5C-5) are cited in the four communities. The empirical evidence is not clear whether the few citations in Repea related to tactic 5C-5 is meaningful. However, this tactic of keeping silent for reasons of not having legitimate knowledge may also be linked with the carrier *identity* (5A-1). As displayed in table 5.6 (subsection 5.2.6) (see discussion in subsection 7.1.6), Repea members appear less prone to relate their identity to other leaders in the government and university. It may be that the strong identity of some members with the academic environment reinforces the fear of making mistakes publicly, fostering silence (tactic 5C-5). As Repea members do not identify themselves often with the academic environment, they may be less concerned about keeping silent. These are suppositions derived from the empirical data, but it is not clear whether they really explain the observations.

7.1.6. Cultural-cognitive relational systems

The four communities recognize that many members cultivate similar *identities* with government officials and academic professionals (carrier 6A-1). The identity with both these groups, nonetheless, is less cited in Repea. It is worth noting that the two main leaders in this community are members of the NGO 5 Elementos, Repea's anchor organization. This aspect alone does not explain this difference in identity, as the anchor organization in Rebea is also an NGO (Ecomarapendi). In Rebea, however, respondents identify strong links between the community and the federal government, because of

[18] Among nine citations related to tactic 5C-3 in Rebea, four are from management members: Rebea01; Rebea06; Rebea07; Rebea13.

current projects and the fact that some community leaders have personal ties with government officials, a situation that is not highlighted by Repea members. The identity of Remtea and Reasul with the academic community is straightforward. In both communities the main leaders are academics, and universities are their anchor organizations. In Remtea, the whole management group is closely related to an academic research group (GPEA/UFMT).

Argument 6B-1 is a commonsense statement, cited by members of the four communities: *people are the same inside and outside the community.* In relation to tactics, the four communities have similar behaviour in *creating ambiguous categories of membership* (6C-1), *restricting the management group to those that share the same identity* (6C-2), and having members *keeping silent for disagreeing with the mainstream identity* (6C-5).

Tactic 6C-4, *expel members who do not agree with the mainstream identity*, however, is cited in this investigation only by Remtea respondents. The community expelled a member, as the result of a crisis of identity, as the dissonant voice expressed opinions which irritated the leadership group. As cited before, Remtea has a cohesive management group, with strong identification with a research group and a leftist party, a context which favours the development of a closer conception of acceptable identity, as revealed by interviewees. It appears that it is not by chance that the need of differentiating between membership categories is cited often by Remtea members[19].

7.1.7. Regulative routines

In the category regulative routines, all elements are present in the four communities. Members identify *standard operating procedures* (carrier 7A-1), which in this investigation is related to the influence of processes which impose the segregation of

[19] Citations: Remtea01.04/05/27/32; Remtea02.09/11/13/15/20; Remtea03.04/05; Remtea04.02; Remtea06.02/06/07/08/13; Remtea07.01; Remtea08.06/19; Remtea10.06/19; Remtea11.07; Remtea13.01/03/04/05/06/09; Remtea14.04/08/09.

decision making to management groups. The associated argument takes for granted that *the management group should make decisions*, and relates the segregated structure to competence and effectiveness (7B-1). Tactics are the same in the four communities: *keep a segregated discussion list for leadership members* (common members are not allowed on the management discussion list) (7C-1); *keep control over community gatekeepers* (7C-2); and *keep control over community representatives* (7C-3).

7.1.8. Normative routines

In the category normative routines, *jobs and roles* (carrier 8A-1), and the correspondent arguments and tactics are all present in the four communities. As the communities are not anonymous, the jobs and roles members have in society naturally influence their online interactions, favouring the reproduction of power relations. Arguments 8B-1, that *people fear losing their jobs or closing the door to future professional opportunities*, and 8B-2, that *people have commitment with their current jobs,* express the influence of the carrier. The consequence is that members *keep in the community a posture which is adequate to the roles and jobs one has in society* (tactic 8C-1).

7.1.9. Cultural-cognitive routines

The influence of *scripts* (carrier 9A-1) and the identification of the associated argument 9B-1, *if a member has a role, this means something; otherwise there is no reason to give titles*, are cited by members of the four communities. In relation to tactics, the four collectivities *centralize the representation of the community in the executive secretary (or coordinator)* (9C-1), and *respect the role of the executive secretary (or coordinator) and moderators* (9C-3). In Repea, the role of executive secretary still is respected[20], although formally its leadership members have not held this title since June 2004.

[20] Citations: Repea06.08; Repea08.08/09/14/22/30; Repea10.04.

The tactic of *reinforcing respect for the role of executive secretary by blocking ordinary members from representing the community or taking decisions* (9C-2), nonetheless, is cited only by members of Rebea, Repea and Remtea[21]. The absence of citations in Reasul may be related to the fact that ordinary members are clearly excluded from the management group. Having clear governance rules may reduce conflicts caused by ambiguities, also because ordinary members may fell less motivated to challenge the leadership group. There could be other reasons as well.

As discussed in subsection 7.1.4, considering the citations related to both tactics 9C-2 and 4C-1D (*undermine the legitimacy of ordinary members as potential leaders*), and the argument 2B-2 (*it is necessary to have a group to resolve conflicts and reduce opportunistic behaviour among members*), Reasul respondents appear to be less concerned about conflicts in general and disputes between leadership and ordinary members than the other communities. It may be, nonetheless, that this impression emerges from the fact that the majority of respondents in this community are from the management group. It is necessary to highlight, nonetheless, that these tactics (9C-2 and 4C-1D) and argument (2B-2) appear in Repea and Remtea, although also in both communities there are more management members among the respondents. These tactics and argument are also present in Rebea, which has a balanced number of interviewees among management and ordinary members. Thus the empirical evidence is not conclusive whether Reasul faces less conflict indeed, or the data is biased because the kind of interviewees in this community, or the perception of conflict is glossed in this community because the general discussion list is moderated, thus occasional conflicts with ordinary members may have been filtered by leaders.

7.1.10. Regulative artefacts

In relation to *objects complying with specifications* (carrier 10A-1), the four communities are influenced by the technical features of the same artefacts: discussion lists and the

[21] Although Remtea members cite this tactic eight times, all citations refer to two specific cases which were in discussion at the time of the interviews.

websites. Respondents of the four communities also agree that *members do not know how to use Internet tools, thus the difficulty of appropriating alternatives* (argument 10B-1).

In relation to tactics, the four communities *avoid Internet tools (other than the discussion list and the website) that would foster transparency, participation and less centralized decision-making processes* (10C-1), with the exception of Rebea, which has recognized the incorporation of Orkut. As discussed previously (subsections 6.1.7 and 6.1.10), the appropriation of this tool was not initiated by Rebea's management group.

As explained in the introduction of this chapter, although tactic 10C-1 is cited many times by Rebea respondents and only once by Reasul members, the fact is that none of the communities' leaders have been more proactive in the introduction of other Internet tools. Rebea[22] members, nonetheless, are clearly more concerned than Reasul[23] members about the adoption of Internet tools (see subsection 6.1.10). Perhaps Rebea members cite more issues related to the adoption (and non-adoption) of tools because of this concern, independently of their actual practice. It is not clear from the empirical data why Rebea members are more concerned about the theme.

7.1.11. Normative artefacts

In relation to *objects meeting conventions and standards* (carrier 11A-1), both tools (websites and discussion lists) are customized in similar ways by the four communities, i.e. the leadership groups control these channels. In relation to arguments, that *it is necessary to control the quality of content on websites and discussion lists* (11B-1), and that *members do not know how to use such tools in a more flexible way* (11B-2), both are common in the four communities.

[22] Citations: Rebea01.20; Rebea02.05/15; Rebea03.19; Rebea05.07; Rebea06.03/19; Rebea07.10; Rebea14.24; Rebea16.09; Rebea17.04/09.

[23] Only Reasul01.19/28 expresses such concerns.

In relation to tactic 11C-1, the leadership groups in the four communities *avoid customizing websites and discussion lists in a more flexible way.* Reasul, nonetheless, has some particularities that call for attention[24]. In relation to its website, during the funded project control was very strict: only the main leaders had the password to publish content. Since the project ended, the community has changed the software and has opened the publishing tool to a greater number of management members. Ordinary members (from the general discussion list) cannot publish, and the main leadership member keeps the power of moderation on the website, being able to exclude content that does not match the established criteria. The other three communities have kept the same model since the creation of their websites, i.e. very strict control of the publishing tool (few leadership members have authorization to publish or to validate content).

Furthermore, on Reasul's general discussion list, ordinary members cannot communicate with others directly[25]. Members can only send messages to a few leadership members, who moderate the interaction within the community. In this group of four communities, only Reasul adopts the moderation of messages on the general list. The management group adopted the moderation after an attempt at opening the list for discussion. On the occasion, the group was attacked by an Internet virus, which caused great distress among the members. The list has been moderated since. Reasul's management group also has a segregated list (as all the other studied communities). This list was very restricted during the funded project in terms of number of members (only five organizations were represented). After the project, leadership members invited more people to the management group (at the time of the interviews, the management group had members from 29 organizations)[26].

[24] Citations: Reasul01.10; Reasul02.01/15; Reasul04.05.

[25] Citations: Reasul01.09/13; Reasul02.10; Reasul03.10; Reasul04.08; Reasul05.02; Reasul09.02; Reasul10.06/07.

[26] Citations: Reasul01.09; Reasul07.12; Reasul12.12.

7.1.12. Cultural-cognitive artefacts

In this investigation, *objects possessing symbolic value* (carrier 12A-1) have been identified in the four communities, drawing upon the fact that members cultivate the idea that Internet tools are less efficient than face-to-face communication, although the virtual channels are extremely important in their interactions[27].

In relation to arguments, the four communities adopted the same explanations, somehow repeating the same value that *face-to-face meetings are more relevant for the community than the discussion lists* (12B-1), or emphasising that *restricting the communication to virtual channels would exclude people who do not have access to the Internet* (12B-2). It is interesting that Rebea members have the same justification, although the community has very irregular general face-to-face meetings, and depends almost entirely on Internet-mediated interaction.

In relation to tactics, members of the four communities emphasise their practice of *making relevant decisions in face-to-face meetings* (12C-1). The available data, nonetheless, indicates that only in Remtea is this apparent tactic close to their practice, as the management group often has face-to-face interaction (in monthly formal meetings and daily informal conversations). In other communities, some decisions are restricted to face-to-face meetings, but this tactic is more a rhetorical device to justify the fact that decisions are not made on the general discussion lists than a relevant practice.

In Reasul, this tactic was pervasive when the community was sponsored by the government, as it was then possible to pay for the travelling of leadership members (five organizations which formed the management group). After the funded project, face-to-face meetings have lost relevance, as the community does not have the money to sponsor management members. Still, two members believe that relevant decisions should be made in these meetings.

[27] Even in Remtea, which has an intense offline life in Cuiabá, more than 50% of its communication is through the Internet (Remtea08.07).

7.2. Differences and similarities in the cross-case analysis

This chapter advances the analysis of the similarities and differences between the four case-studies investigated by this thesis. The cross-analysis between case studies leads to two main conclusions: (i) the influence of institutional carriers is pervasive, and the four cases have a high degree of similarity in their process of the institutionalisation of segregated decision-making processes; and (ii) still some differences among the cases are noticeable, reinforcing the idea that institutionalisation should be studied in its context, as the particularities of each community affect how institutions are diffused.

From the comparison between the cases, empirical evidence suggests the relevance of some contextual aspects, such as: (i) the level of dependence in relation to the main sponsor; (ii) the power sponsors have of applying sanctions mechanisms (reward or punishment); (iii) the perceived legitimacy of leaders; and (iv) the presence of occasional events which triggered solutions that are peculiar to the kind of situation (such as the cases which led to the moderation of Reasul's discussion list, the expulsion of a Remtea member and the exclusion of a Rebea member from the decision making).

Focusing on similarities, the four communities recognize that *societal* and *members' expectations* demand them to have leaders in specific roles (carriers 2A-1 and 2), and that *power systems* (*influence of sponsors*, carrier 4A-1) and *authority systems* (*status* in society and *government influence*, carriers 5A-1 and 5A-2) affect their social structures, undermining the idea of equal status between all members. The four communities also recognize the influence of *hierarchical schemas* (carrier 3A-1), and *standard operating procedures* (in this investigation, the segregation of decision-making processes, carrier 7A-1), which undermine the ideal of constructing a network organization.

In relation to Internet tools, all communities adopt similar Internet tools (*objects complying with specifications*, carrier 10A-1) and customization of websites and discussion lists (*objects meeting conventions and standards*, carrier 11A-1), and have similar symbolic perceptions of such artefacts (*objects possessing symbolic value*, carrier

12A-1). Communities also relate that the *identities* (carrier 6A-1) and *jobs and roles* (carrier 8A-1) members have in society influence their behaviour in Internet-mediated interactions, and that the titles some members carry (such as 'executive secretary') affect their status in decision making processes (*scripts*, carrier 9A-1).

Still focusing on similarities, the four communities cultivate arguments and tactics to legitimise their leadership groups (see also discussion in subsection 8.1.2). For instance, members argue that it is necessary to have a group to resolve conflicts (argument 2B-2), also associating managerial efficiency[28] with the segregation of decision-making process (argument 7B-1). Some argue that members become leaders because of their interest, commitment and contribution to the community (arguments 4B-3 and 5B-2), and because of their legitimate authority in the field of environmental education (argument 5B-1). The organization of peers to give public support to the management proposals on the general list (tactic 5C-1[29]) and the requirement of attending face-to-face meetings to have a say in decision making (tactic 4C-1C[30]) also try to legitimise the governance structures in front of ordinary members.

Complementarily, communities develop tactics to undermine the legitimacy of ordinary members as leaders, again aiming to empower the management group. In this direction, for instance, ordinary members are accused of having either opportunistic behaviour, or less knowledge than is necessary to be leaders (tactic 4C-1D). The flaming of members (tactic 5C-2) and the fact that leaders ignore contributions of some members (tacit 5C-4) also work in the direction of reducing the legitimacy of some in relation to others. The creation of two membership categories (tactic 6C-1), in order to isolate ordinary members

[28] As explained in subsection 6.1.7, the argument 7B-1 is cited in two contexts. Some members took for granted that management members should make decisions, without further explanation. Other members (the majority of citations) associated the argument with the idea of managerial efficiency. See specific citations in subsection 6.1.7.

[29] This tactic is cited only by Rebea and Remtea members.

[30] This tactic is only cited by members of Repea and Remtea as explained in subsections 6.1.4 and 7.1.4, considering the context in which the respective management groups have contextual facility to meet in specific localities, thus being able to impose such a rule over the other members.

from the decision-making processes, is another technique with similar objectives. Thus the question of trying to reassure the legitimacy of social structures is clearly an issue in these four communities, through diverse arguments and tactics.

The tactic of flaming members (5C-2) can also be understood as an enforcement mechanism by means of punishment. Indeed another common aspect present in the four cases is the development of tactics which enforce behaviour, i.e. which use techniques to make members to accept the role of the management group, and to respect their ideas and identity as being representative of the community as a whole. For instance, in Rebea the management group has excluded at least one member from decision-making processes, because of her opposition to the main sponsor (federal government) (tactic 4C-3). In addition, Remtea expelled a member for reasons of non-compliance with the mainstream identity (tactic 6C-4). The appropriation of Internet tools through the four communities also works as an enforcement mechanism, but by means of limiting the channels and forms of communication (tactics 10C-1 and 11C-1), rather than punishment (see discussion on enforcement mechanisms in subsections 8.1.1 and 8.1.2).

Focusing on the differences, complementarily, the *legislation* (carrier 1A-1) affects all communities but Remtea, as it has not received government funding. The legislation has especially influenced Reasul's governance structure, which was created because of this funding. Remtea, differently, is the only community affected by *governance systems* (carrier 4A-2), because of the level of intertwining between both the community and of a research group (GPEA/UFMT) in relation to their activities and membership.

Another interesting difference can be noticed in relation to members who assume formal roles such as being executive secretary. The four communities confirm a high level of respect for such roles (tactic 9C-3). However, Remtea has a particular situation in which members (and society) identify as the main community leader, an academic who does not have the role of executive secretary. Repea also has a particular characteristic in relation to formal roles. The community has given up on having an executive secretary since June

2004, but the member who formally occupied this role previously is still respected in the same way (subsection 7.1.2).

In relation to the customization of Internet tools, Reasul is different from other cases. On the one hand, it is the only community which moderates the general discussion list (subsection 6.1.11 and 7.1.11). On the other hand, it is the community that permits more leadership members to publish on the website (ordinary members are not allowed to publish, just as in the other communities). Also related to Internet tools, the four communities emphasise making relevant decisions in face-of-face meetings (tactic 12C-1), but in Remtea this tactic is closer to their effective practice, considering that the majority of the management group works in the same building. In Reasul, face-to-face meetings have become less relevant after the funded project due to lack of money (subsection 7.1.12).

The data analysis also highlights that communities share different anecdotes about themselves, and cultivate different set of arguments. Thus some facts and reasons are cited more often in one community than another not necessarily because the final social structures are diverse, but because community members construct their identity differently. For instance, many Remtea interviewees recognize the tactic of blocking ordinary members from representing the community (tactic 9C-2), citing two episodes in which ordinary members strongly challenged the community practice of centralizing the choice of representatives with the management group. The memory of these cases, for whatever reason – perhaps the fact that usually members respect the main leadership without questioning procedures – is strong in the community, affecting their citations of the case.

7.3. Concluding remarks

Starting from the findings and analysis developed in chapters 5, 6 and 7, the next chapter answers the proposed research question on how institutional carriers influence the governance structures of Internet-mediated communities, fostering the segregation of

decision-making processes. The suggestion of adding other analytical constructs (argument and tactics) to the categories of carriers, and the cross-case analysis confirm the relevance of considering agency and contextual elements when studying the process of institutionalisation, as it is discussed in chapter 8.

Following this empirical contribution, the next chapter opens a theoretical discussion on how the proposed analytical constructs (arguments and tactics) may contribute to a better understanding of the process of institutionalisation. Drawing upon structuration theory (Giddens, 1979, 1984), the chapter suggests expanding Scott's (2001) framework in the direction of emphasising agency (arguments and tactics) as well as structure (carriers) in studies related to the process of institutionalisation.

8. Concluding discussion: Understanding the diffusion of social structures through carriers in Internet-mediated communities

The present investigation started from an interest in the governance structures of the collectivities which emerge from Internet-mediated interactions in contemporary societies. Previous research showed that such virtual communities have developed diverse decision-making processes, from participatory democratic models to more hierarchical ones (Jones, 1995; Steinmueller, 2002; Graham, 1999; Bonaccorsi and Rossi, 2003; Sharma, Sugumaran and Rajagopaian, 2002; Ljungberg, 2000; Juris, 2005; Pickard, 2006). This observed diversity of social structures poses the question of how to understand the development of different forms of organizing collective action in an environment in which face-to-face, geographically bounded interactions are less relevant.

In order to explore this theme, a pilot study (subsection 1.2.1) was conducted in 2004 and 2005, with a group of Brazilian environmental-education Internet-mediated communities. In this investigation, members emphasised the process of making decisions as being at the centre of their governance structures. Curiously, the interviews disclosed a situation in which the communities have two parallel models of governance. Their ideal model of governance was an abstract idea about how decisions should be made in the community, following network forms of organization. In this ideal model, all members have the same power in decision-making processes. In contrast, their actual model of governance – the one the communities, in practice, reproduce – was based on segregated decision-making processes, an instance of centralization similar to hierarchical organization, as described by Simon (1997 [1945]). In other words, in spite of their members' stated intent to create horizontal, network governance structures, in practice only some members in these communities have an effective say in decision-making.

In trying to understand how the segregated decision-making processes have spread through the studied communities, the empirical data was analysed through the lens of new institutionalism. The conclusion from this pilot study was that the studied

phenomenon resembled a process of institutionalisation of emergent governance structures. As proposed by DiMaggio and Powell (1991b [1983]), institutional structures diffuse through organizational fields, inducing individual entities to become similar, isomorphic, in relation to others. The level of interaction and interdependence between entities works to forge such similarities, through coercive, normative and mimetic mechanisms (discussed in subsection 3.2.2). Indeed, interviewees recognized that legislation, power systems, hierarchical models, social expectations and Internet tools were influencing their communities to behave differently from their intentions of creating network decision-making processes.

Considering the pilot study and the scholarly literature, this dissertation investigates the diffusion of segregated decision-making processes in a group of four Brazilian environmental-education Internet-mediated communities (Rebea, Repea, Remtea and Reasul), applying the theoretical lens of new institutionalism. As explained in chapter 3, new institutionalism proposes that social actors are influenced by resilient social structures, in such a way that their behaviour reproduces these structures to some degree. This research thus investigates how institutionalised structures influence actors in these communities in relation to the diffusion of segregated decision-making processes. This investigation is conducted through the lens of *institutional carriers*, understood as mechanisms and elements, such as rules, norms and cognitive schemas, which are repositories of social structures (Weber, 2002 [1930]; 1978 [1956]; Berger, Berger and Kellner, 1973; Jepperson, 1991; Meyer, 1994; DiMaggio and Powell, 1991a, 1991b [1983]; Scott, 1994a, 2001; Scott and Meyer, 1994).

In this direction, this research adopts Scott's (2001) framework on 12 categories of institutional carriers (see table 3.2) and proposes to answer the following research question (introduced in subsection 1.4.4):

How do institutional carriers influence the establishment of governance structures in Internet-mediated communities that lead to segregated decision-making processes (an instance of centralization) that contrast with the official rhetoric of the communities for non-hierarchical, network-like modes of operating?

Chapters 5, 6 and 7 present the detailed findings and analysis of this thesis, which enable an answer to this research question. The findings describe: the role of institutional carriers in the diffusion of segregated decision-making processes in the studied Internet-mediated communities; the role of agency to support such carriers in different situations (through arguments and tactics); and the relevance of context in the diffusion of institutions through the observed carriers, considering the differences between the four communities through a cross-case analysis.

This concluding chapter proposes answers to the research question in a systematic fashion, bringing together the findings and analysis discussed previously with the theoretical framework on new institutionalism. The first section below presents the *empirical contributions* of this research. It explains the role of institutional carriers in the diffusion of institutionalised social structures through the studied Internet-mediated communities. It also explores how agency and context can help to understand the influence of carriers, through the lens of new institutionalism, as social structures only exist when people reproduce them in their environment.

The second section introduces the *theoretical contributions* of this thesis, proposing that Scott's (2001) framework on institutional carriers may be improved through the addition of arguments and tactics to his categories. It claims that these additions provide an illuminating tool to balance the perception of social structure and agency in studies of institutionalisation.

The third section discusses *research limitations*. It first introduces a full conceptualization of the studied communities, in order to make clear the limits of this

investigation in terms of an empirical object. The section then points out other limitations of the presented study and how this research has worked to overcome such shortcomings.

The final section presents some *concluding remarks* on the main contributions of this research and *future research* that may be suggested by this investigation.

8.1. Empirical contribution: The influence of institutional carriers

This investigation suggests that, through many channels, institutional carriers do influence social actors' behaviour in the establishment of governance structures that lead to segregated decision-making processes in the four studied Internet-mediated communities. Scott's (2001) framework has been useful in the present study, as it covers a wide spectrum of possible carriers, which has permitted a level of flexibility in the analysis of the diffusion of social structures through different contexts.

In light of the dependence of the studied communities on Internet-mediated communication channels, this research supports the contention that it is essential to recognize that Information and Communication Technologies are carriers of institutionalised social structures and themselves become institutions in specific contexts (Avgerou, 2002: 30-34; Venkatesh, 2003: 344; Silva and Backhouse, 1997: 390; Swanson and Ramiller, 1997). This endorses Scott's inclusion of artefacts as possible repositories of social structures in his framework.

The role of carriers in the diffusion of institutional forms is discussed in the first subsection below. The second subsection discusses agency and considers how social actors develop arguments and tactics when influenced by carriers in specific contexts. The third subsection explains that carriers, arguments and tactics interact with each other, creating a more complex picture than would be observed through analysing these

elements individually. The last subsection evaluates the adequacy of using of Scott's (2001) framework in this study.

8.1.1. The role of structure

Recalling Berger and Luckmann's (1967 [1966]: 74-79) discussion on the creation and diffusion of social structures through social interaction (as discussed in section 3.2.1), some typified actions become habitualized. When such actions are repeated through time, gaining historicity, they become objectified institutions. At this stage, institutionalised social structures are "experienced as possessing a reality of their own, a reality that confronts the individual as an external and coercive fact" (ibid: 76). In other words, institutions are experienced as natural facts that exist independently of human action (ibid: 76-78). As a result, institutional features influence behaviour, because they are taken for granted as objective reality[1].

In order to understand this influence, some authors propose to observe the role of institutional carriers in the diffusion of social structures. As suggested by Scott (2001), institutional carriers are repositories of institutionalised social structures, carrying them from setting to setting (see discussion in subsections 3.2.3 and 3.2.4). The influence they exert, nonetheless, is also related to contextual factors (Scott, 2003. 2005).

The empirical evidence discussed in previous chapters confirms that institutional carriers influence actors' behaviour, fostering the reproduction of segregated decision-making processes in the four environmental-education Internet-mediated communities. As the table 8.1 below summarizes, the 12 categories of carriers proposed by Scott's (2001) framework are present in all the four communities, with a few, indicated, exceptions. The table thus confirms the relevance of considering regulative, normative and cultural-

[1] Institutions also influence behaviour through the constitution of roles, i.e. through the internalisation of social structures. This argument is explored in subsection 8.1.2, as it is related to understanding agency through an institutional perspective.

cognitive systems in the processes of the diffusion of social structures through institutional carriers.

Table 8.1 – *Institutional carriers[2]: Brazilian Internet-mediated communities*

Carriers	**Pillars**		
	Regulative	**Normative**	**Cultural-cognitive**
Symbolic systems	Legislation *[1A-1]	Societal [2A-1] and members' expectations [2A-2]	Hierarchical schemas [3A-1]
Relational systems	Power systems – influence of sponsors [4A-1] Governance systems ** [4A-2]	Authority systems – status [5A-1] and governmental influence [5A-2]	Identities [6A-1]
Routines	Standard operating procedures [7A-1]	Jobs and roles [8A-1]	Scripts [9A-1]
Artefacts	Objects complying with specifications – websites and discussion lists [10A-1]	Objects meeting conventions and standards – websites and discussion lists [11A-1]	Objects possessing symbolic value – Internet tools [12A-1]

** Only observed in Rebea, Repea and Reasul. ** Only observed in Remtea.*

Each of these carriers, as presented in chapter 5, is recognized by community members as being a mechanism or element that influences their behaviour towards reproducing segregated decision-making processes. Institutional features are embedded in carriers (Scott 2001: 77), which work as repositories of related social structures. Thus, although community members insist on the intention of creating network forms of organizing, they admit that segregated structures are pervasive due to the influence they receive from the

[2] Recall that, in this thesis, carriers are numbered from 1A to 12A, each one related to a category in Scott's (2001) framework. The last numbers added to each category of carrier are related to the specific carrier in the category. Thus in the category 2A (*normative symbolic systems*), the carrier 2A-1 refers to *societal expectations*, and the carrier 2A-2 refers to *members' expectations*. Sequentially (in tables below), the arguments are numbered from 1B to 12B, and the tactics, from 1C to 12C, again respecting the 12 categories. The numbers associated with these roots again indicate the specific arguments and tactics in each category (for instance, 2B-1 and 2C-1 refer respectively to the first argument and the first tactic related to carriers in the category 2A).

many carriers in their contexts. The next paragraphs summarize the way this influence is exerted, as it differs in line with the characteristics of each carrier.

Considering carriers related to *symbolic systems*, firstly, the *legislation* (1A-1) permits these communities to receive government funding for specific projects, but it also requires communities to be represented by an anchor organization, which is empowered relative to other members, favouring the segregation of decision making in the funded projects[3]. Secondly, wider society and community members jointly cultivate *expectations* (2A-1 and 2A-2) that the communities need to be represented by members who have formal roles, such as that of executive secretary. The differentiation between roles empowers gatekeepers and spokespeople in relation to ordinary members, legitimating the identified leaders as decision-makers. Thirdly, *hierarchical schemas* (3A-1) exert their influence through taken-for-granted models[4]. Based on their cultural-cognitive framework, members reproduce the hierarchical models they are used to, accepting that some have more power than others, which affects their relative position in decision-making structures.

Focusing on carriers associated with *relational systems*, interviewees recognize that *power systems*, through the *influence of sponsors*, affect community governance structures (4A-1); members linked with government, universities and NGOs have more power in decision-making processes in respect of the Internet-mediated collectivities. Furthermore, in the case of Remtea, community members and activities are deeply

[3] As introduced in chapter 5, legislation affects, by legal means, the funded projects, not the community governance structure as a whole. Although in practice the same structure is reproduced at broader levels (see tactic 1C-1, subsection 6.1.1), this reproduction is not a legal imposition.

[4] The process of institutionalisation implies that actors internalise social structures, through socialization, which then become mental models, framing the way people encounter the world (Berger and Luckmannn 1967 [1966]: 78-79). The model is a cognitive framework of how things are done. It limits the creation of alternatives, as the past experience guides what is expected from the future (Douglas, 1987: 47-48). This understanding of institutions at the cognitive level is applicable also to the other carriers in the cultural-cognitive pillar (*identities*, *scripts* and *objects possessing symbolic value*) (see subsection 3.2.1 on how institutions are internalised).

intertwined with an academic research group (GPEA/UFMT) and the *governance systems* of the academic group deeply influence the community (4A-2), as the boundaries between both structures are not defined. A*uthority systems* also influence community governance structures, reproducing the *status* members have in society (5A-1). In this category, the *government influence* also affects the legitimacy of some members when recognizing them as community representatives (5A-2). In both cases, status empowers some members in decision-making processes. Finally, the *identity* people have in society (6A-1) influences the way they behave in online interactions. Thus their close identity with other leadership groups in the government and universities, for instance, reinforces the segregation of decision making, as community leaders form a group which is closer to these other leadership groups than to the ordinary members of the community.

In considering carriers related to *routines*, firstly, *standard operating procedures* (7A-1), in this investigation, bring to the community the segregated decision-making processes, which are pervasive in hierarchical organizations (Simon, 1997 [1945]). Indeed, this research starts by exploring this routine (chapter 1), considering the empirical evidence that communities embed segregation in their governance structures. Secondly, *jobs and roles* (8A-1) influence the community because members are not anonymous, thus to some degree they reproduce in online interactions the same relations they have in offline collectivities. This mechanism favours the segregation of decision making because members avoid opposing powerful people in their social networks, such as their bosses or their academic supervisors (in the case of students). Thirdly, *scripts* (9A-1) also reinforce the legitimacy of some members in making decisions, as members associate roles with activities, such as linking the executive secretary with the activity of representing the community, elaborating projects and controlling the contents of websites.

Finally, considering *artefacts* as carriers, in the current cases these are the adopted Internet tools, mainly the websites and discussion lists, which are the main communication channels in these communities. Firstly, considering *objects complying with specification* (10A-1), websites and discussion lists have technical features which permit, but do not require, some members to exert control over others, favouring

segregation of decision making. Thus these objects carry the possibility of segregation – such as limiting access to publishing on the website and to entering discussion lists, restricting these to management members. Secondly, in analysing *objects meeting conventions and standards* (11A-1), the focus is on the same artefacts, but, now, in relation to how they are customized by communities. Although the technical features permit a range of forms of appropriation (some more democratic than others), the default customization of the artefacts favours the segregation of decision making. Thirdly, *objects possessing symbolic value* (12A-1) indicate that artefacts transmit values into the community. The belief that Internet communication channels are less efficient than face-to-face interactions undermines the legitimacy of general discussion lists as a space for decision making, which in practice excludes ordinary members from the process, while decisions are made mainly on the segregated discussion lists[5].

Both categories of carriers that are not present in all the four communities are from the regulative pillar. In the case of the *legislation* (1A-1), Remtea is not influenced by this carrier because the community has never accepted direct government funding. In the case of *governance systems* (4A-2), only Remtea has received this influence, because the community boundaries are ill-defined in relation to the related academic research group.

As explained by Scott, regulative systems conform to rules – legal or quasi-legal requirements – and their influence is sanctioned by coercive mechanisms (2001: 60; 2005: 465). Thus as Remtea did not accept government funding, it is not subject to the influence of the *legislation* and its coercive mechanisms[6].

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[5] There is an inherent contradiction in this carrier. Logically, this symbolic value should undermine the legitimacy of both the general and the segregated discussion lists. However, as explained in subsection 5.2.12, interviewees use this symbolic value only to undermine the legitimacy of the general discussion list as a channel of decision making. The same reasoning is not applied in relation to segregated discussion lists. Thus I keep the meaning brought by the interviewees, although it is logically inconsistent.

[6] Observe that in this investigation the carrier *legislation* is related to specific government funding (FNMA – Fundo Nacional do Meio Ambiente), as cited in subsection 5.2.1. It may occur that other aspects of legal regulations affect these communities, but these have not been cited by interviewees.

As the boundaries between Remtea and the related academic group are unclear, community members copy the power structures they suppose to be prevalent in the higher prestige and more powerful partner organisations. The governance system of the academic research group is supported by rules defining who takes decisions and who is subordinated. Although it is said that both structures are independent, in practice, as revealed by the interviewees, Remtea management members do not differentiate between their formal work in the academic research group and their voluntary work in the community, thus they act in accordance with their perception of how things are legally sanctioned and strive for homogeneity, not differentiation, of processes.

Sanction mechanisms and legitimacy associated with carriers

The cited carriers can also be understood in terms of their capacity of being mechanisms of sanction (enforcement) and legitimation in the institutionalisation of segregated decision-making processes through the studied communities.

As discussed in section 3.1, the diffusion of social structures depends on the presence of sanction and reward mechanisms[7], imposed by actors who have power to control such methods (Jepperson, 1991: 145; Knight and Ensminger, 1998: 106; Scott, 1998: 316-317; Nee, 1998b: 9-10). The carrier *legislation* (1A-1), for instance, is related to both reward mechanisms (through access to funding) and punishment ones (through legal regulation of the anchor organization, which accepts accountability for the received money). Also *power* and *governance systems* (4A-1 and 4A-2) bring both sanctions mechanisms, as sponsors reward acceptable behaviour through direct and indirect benefits (for instance by funding projects, meetings and publications) or may punish behaviour by cutting or denying opportunities in situations of non-compliance. Considering the carriers *jobs and roles* (8A-1), people could be punished or rewarded in their offline interactions for their behaviour in the online space (argument 8B-1 expresses this fear, in subsection 6.1.8).

[7] For Berger and Luckmann (1967 [1966]: 73), sanction mechanisms are necessary only when the institutionalisation is not complete. Otherwise, institutions are taken-for-granted cognitively as an objective (a non-human) facticity, making the imposition of control mechanisms unnecessary (ibid: 106).

In addition, the artefacts work as enforcement mechanisms in the current context by means of framing the opportunities of action, rather than through imposing rewards or punishments. As discussed in subsection 5.2.10, even considering the flexibility of the technology used, this malleability is not infinite. Thus some material features of artefacts (related in this study to the carrier 10A-1) may constrain action physically or by means of framing the cognitive understanding of possibilities (Doherty, Coombs and Loan-Clarke, 2006; Orlikowski, 2000; Kallinikos, 2002). The level of enforcement is greater when communities adopt a standardized customization that is congruent with segregated decision-making processes (related in this study to the carrier 11A-1). Thus when community leaders limit the publishing feature on the website to a few members, other members are forced to comply, as they cannot publish without knowing the correct password.

Complementarily, the reproduction of patterned behaviour depends on legitimacy: the assumption that actions are desirable, appropriate, justifiable and meaningful within a social system of norms, values and beliefs (Suchman, 1995: 574, 576; Scott, 2005: 465; 2001: 59-60; Berger and Luckmann 1967 [1966]: 79, 82) (see section 3.1). Furthermore, by conforming to institutions, social actors can be rewarded with increased legitimacy within their social networks (Meyer, 1992: 263, 269; Avgerou, 2000: 236; Meyer and Rowan, 1977: 352, 354; Powell, 1991: 190).

Indeed, the studied carriers are linked with mechanisms of legitimacy. For instance, *authority systems* (5A-1 and 5A-2) legitimate the segregated structures normatively (Scott, 2005: 465), associating them with the legitimacy community leaders have in society. Thus if members have legitimacy in society as authorities, they have legitimacy in the community as leaders as well. Similarly, but in the opposite direction, when communities conform to *societal expectations* (2A-1), nominating formal representatives such as executive secretaries and coordinators, society legitimises these collectivities. In this case, the legitimacy society gives in recognition of compliant behaviour may become, in turn, a reward mechanism, as legitimacy may be translated into benefits such

as funding. Communities tend to conform to expectations in order to have legitimacy, a phenomenon observed in other forms of organization (DiMaggio and Powell, 1991b [1983]: 68-69).

Alternatively, legitimacy in cultural-cognitive carriers is related to the degree they are recognizable and comprehensible (Scott, 2005: 465). The example of *hierarchical schemas* (3A-1) illustrates this. Respondents take for granted the legitimacy of some community members having more power in decision making, in spite of the declaration that all members have the same power in their communities. It is interesting to observe here that the difficulty of imagining alternatives – creating new models – confers legitimacy on how things are done presently (Scott, 2005: 465; Berger and Luckmann, 1967 [1966]: 71). Furthermore, mimetic mechanisms, whereby actors copy successful behaviour to obtain legitimacy in society, may help to understand the phenomenon (DiMaggio and Powell 1991b [1983]: 67). As hierarchical schemas are broadly legitimated in society, these models in turn legitimate these communities, as mimicking them may render rewards to the collectivities, since they depend on credibility to obtain funding. Also *scripts* (9A-1) provide legitimacy to some members in relation to their superior roles in decision-making processes.

8.1.2. The role of agency

The empirical evidence, presented in chapters 5 and 6, suggests that the diffusion of segregated decision-making processes emerges from how agents interpret and act to reproduce related social structures in specific situations. Carriers diffuse elements of institutionalised features, but they only exert influence upon the emergent structures as far as social actors reproduce them. The mere presence of carriers does not explain the diffusion of institutions. It is thus interesting to reinforce some concepts related to agency, in accordance with the adopted theoretical framework.

As explained in chapter 3, the interaction between agency and social structure is complex and multidirectional. Formulating structuration theory, Giddens (1979: 64, 70; 1984: 17, 25, 374) argues that actors constitute social structures through interaction, but they are themselves constituted by these social structures. Similarly, new-institutionalist scholars emphasise both aspects of agency: that institutions constitute roles and forms of 'actorhood' (see subsection 3.2.1); and that agents should choose among conflicting institutions in specific contexts (see subsection 3.3.2).

Thus on the one hand, when internalised through socialization, institutional features become embodied in individuals as social roles and appropriate conduct (Berger and Luckmann, 1967 [1966]: 78-79; Meyer, Boli and Thomas, 1994: 9-10; Scott, 1994b: 67; Strang and Meyer, 1994: 104-111; Hasselbladh and Kallinikos, 2000: 710). When associated with enforcement mechanisms, the internalised social structures favour the reproduction of patterned behaviour, bringing predictability to social life (Berger and Luckmann, 1967 [1966]: 83, 91; Hasselbladh and Kallinikos, 2000: 710-712; Meyer, 1992: 263; Douglas, 1987: 4, 8, 45; Scott, 1994b: 66).

On the other hand, agents decide the appropriate behaviour in an environment of conflicting institutional features, in which they make choices in face of what they learn through interaction with the world (Giddens, 1984: 14-15; 1995: 235; Meyer, 1992: 264; Bhaskar, 1998: 218; Manicas: 1998: 320; Scott, 2001: 76). Thus the reproduction of institutionalised social structures cannot be taken for granted, as people may change their behaviour (Scott, 2001: 50; 1992b: 161-174; 1994b: 75-76; Avgerou, 2000: 234-235; 2002: 37; Berger and Luckmann, 1967 [1966]: 99, 103; Powell, 1991: 195, 199) (see section 3.3).

Even starting from the idea of internalised social structures, Berger and Luckmann (1967 [1966]: 78-79) argue that this process is continuous, as there is a permanent dialectical dialogue between humans and the social world. Thus the constitution of actors as roles should be understood in this dynamic fashion, as agents change their understandings and actions (ibid). Peters and Pierre (1998: 567) suggest that in the short term institutions are

perceived as structures, but that in the long term social structures are flexible. Also Douglas (1987: 45-48) maintains that although cognitive processes depend on institutions that are internalised as taken-for-granted understandings, it does not mean that they are always followed.

This investigation draws upon this perception that institutions are dynamic, agreeing with Scott (2001: 39, 48, 72-77) that it is necessary to emphasise the more active role of agency in the diffusion of institutions, as stated by Giddens' structuration theory. This dissertation thus agrees with Scott (2005: 467), that "while recognizing that actors are institutionally constructed, it is essential to affirm their (varying) potential for reconstructing the rules, norms, and beliefs that guide – but do not determine – their actions." Indeed, the empirical evidence, presented in previous chapters, shows that the embedding of the carried social structures in the studied settings demands agency. Still, this agency produces both the simple reproduction of institutional features and the change of social structures.

In this study, agency is analysed twice: (i) through the creation of *arguments* which justify the anomalies between the ideal model of network governance and the actual model of segregated decision-making processes; and (ii) through the creation of *tactics*, which might sometimes be the simple repetition of the model suggested by the carrier (which still depends on agency), but in other situations is something which derives and deviates from the original social structures, while adapting to the situation. These elements are discussed below, as well as the perspective the empirical evidence suggests: that contextual factors are associated with some of the differences observed between the four cases.

Arguments: how agents justify their behaviour

Table 8.2 – *Institutional carriers: summary of related arguments*

Legislation	*Expectations*	*Hierarchical schema*
The community needs to comply with legislation in order to receive government funding **[1B-1]**.	The community should have a formal interface with society **[2B-1]**; and a group to resolve conflicts **[2B-2]** and to take initiatives **[2B-3]**.	It is difficult both to manage the community without following a hierarchical model **[3B-1]**; and to create a network organization in a hierarchical society **[3B-2]**.
Power and governance systems	*Authority systems*	*Identities*
In decision making, the sponsor has more power **[4B-1]**; as well as the more active members **[4B-3]**; ordinary members are not interested in managing the community **[4B-2]**.	Some people have legitimacy to make decisions because they are either authorities in the field **[5B-1]**; or older members in the community **[5B-2]**.	People carry their identities to virtual interactions **[6B-1]**.
Standard operating procedures	*Jobs and roles*	*Scripts*
The management group should make decisions **[7B-1]**.	People fear losing their jobs **[8B-1]**; and are committed to their current occupations **[8B-2]**.	Having a formal role has meaning for community members **[9B-1]**.
Objects complying with specifications	*Objects meeting conventions and standards*	*Objects possessing symbolic value*
People do not have knowledge of how to appropriate other Internet tools **[10B-1]**.	Conventional customization is adopted to control the quality of content on websites and discussion lists **[11B-1]**; also because people do not know how to use these tools in a flexible way **[11B-2]**.	Face-to-face meetings are more relevant than virtual discussions **[12B-1]**; and communities should not exclude from communication those who do not have access to the Internet **[12B-2]**.

As discussed in chapters 3 and 4, the construction of an institutionalised social order is grounded in shared social meaning. Scott (1994b: 57-59) explains that an action is social

behaviour as far as it is supported by shared meanings, which emerge from the human interaction. This shared meaning is internalised by socialization, in such a way that the collective understanding also becomes the individual comprehension of the world to some degree (Berger and Luckmann, 1967 [1966]: 149-150). Thus people embody both their individual perspectives and a reasonable consensus on social structures (Meyer, 1992: 264), in such a way that agents are continually interpreting meaning, either for conforming to or for modifying rules (Scott, 1994b: 60).

The observation of arguments (summarized above in table 8.2, from tables in chapter 6), in this thesis, emphasises the relevance of shared meaning in the enactment of social structures. As discussed in chapter 6 in relation to arguments, agency works to justify incoherencies, reinforcing and legitimising the institutionalised segregation of decision making in this investigation.

Many of these justifications repeat taken-for-granted beliefs – such as that *the sponsor has more power to define directions* (4B-1), and *people fear losing their jobs* (8B-1) if they oppose their bosses on the discussion lists. Other arguments recall that management groups contribute to the communities, as *it is difficult to manage the community without following a hierarchical model* (3B-1); and that leaders are legitimate as decision-makers because of their capacity and contributions to the communities (summarizing arguments 4B-3, 5B-1 and 5B-2). Other arguments allege that *ordinary members are not interested in managing the community* (4B-2), and that they do not have knowledge of how to use and customize Internet tools (summarizing arguments 10B-1 and 11B-1). The important point is that agents take the initiative in embedding the segregation of decision-making processes on the basis of shared meaning, in order to justify and legitimise the reproduction of social structures which are not consistent with their ideal model of network organization.

Table 8.3 – *Institutional carriers: summary of related tactics* *

Legislation	*Expectations*	*Hierarchical schema*
Make the community's governance structure similar to the governance structure of the funded project. **[1C-1]** Concentrate power and visibility in the anchor organization. **[1C-2]**	Conform to social expectations: keep gatekeepers (moderators, facilitators) and formal representatives, legitimising their roles. **[2C-1]**	Make governance rules blurred, thus members do not know how things are decided, or who chooses community representatives. **[3C-1]** Ignore complaints against centralized structures. **[3C-2]**
Power and governance systems	*Authority systems*	*Identities*
Create obstacles for ordinary members joining the management group. **[4C-1]** Avoid conflict with and criticism of sponsors and people in strategic positions in the government, universities and important NGOs. **[4C-2]** Exclude from debate within the management group those that do not agree with the leadership orientation. **[4C-3]**	Organize your peers in segregated discussions to give support to each other on the general discussion list. **[5C-1]** Flame members. **[5C-2]** Set the agenda. **[5C-3]** Ignore the contributions and opinions of members. **[5C-4]** Keep silent for not having legitimate knowledge. **[5C-5]**	Create ambiguous categories of membership. **[6C-1]** Restrict the management group to those that share the same identity. **[6C-2]** Flame members. **[6C-3]** Expel members who do not agree with the mainstream. **[6C-4]** Keep silent for disagreeing with the mainstream. **[6C-5]**
Standard operating procedures	*Jobs and roles*	*Scripts*
Keep a segregated discussion list for leadership members. **[7C-1]** Keep control over community gatekeepers (moderators and facilitators). **[7C-2]** Keep control over community representatives. **[7C-3]**	Keep in the community a posture which is adequate to the roles and jobs one has in society. **[8C-1]**	Centralize the representation of the community in the executive secretary. **[9C-1]** Block ordinary members from representing the community or taking decisions. **[9C-2]** Respect roles such as of the executive secretary. **[9C-3]**
Objects complying with specifications	*Objects meeting conventions and standards*	*Objects possessing symbolic value*
Avoid Internet tools (other than the discussion list and the website**) that would foster less centralized decision-making processes. **[10C-1]** ** *Except Rebea: Orkut*	Avoid customizing websites and discussion lists in a more flexible way. **[11C-1]**	Make relevant decisions in face-to-face meetings. **[12C-1]**

* *Only main tactics are summarized in this table. Sub-tactics are in original tables in chapter 6.*

Focusing on tactics (summarized in the table 8.3), the presence of agency is related to both the reproduction and the change of social structures. Tactic 7C-1, for instance, reproduces the related carrier: *keep a segregated discussion list for leadership members*, which translates the idea of having segregated decision-making processes into the virtual environment. If management members do not want others participating in decisions, they should create a virtual space with restricted access. It is also the case of tactics 8C-1 (*keep in the community a posture which is adequate to the roles and jobs one has in society*), and 1C-2 (*concentrate power and visibility in the anchor organization*), as both reproduce the carried social structures.

Considering this tactic 1C-2, the funding legislation empowers the anchor organization and agents repeat this empowerment without questioning the structure (subsection 5.2.1 discusses how it could be otherwise, as communities are constrained in relation their interface with the government, but not in their model of decision making). However at the time of the data collection, the communities were no longer subject to this legislation (all projects had finished before the interviews)[8]. Still, members recreated the same structure. Furthermore, tactic 1C-1 – *make the community's governance structure similar to the governance structure of the funded project* – also results from agency that goes further than the mere reproduction of structures carried by the legislation. The legislation enforces a structure in specific projects, but not the extension of this structure beyond the projects to other community activities.

In other cases, the tactic is a new social structure, which supports the institutionalised one in the specific situation. Tactic 3C-1 – *make governance rules blurred and ambiguous* – for instance, permits disguising the hierarchical structure (members having different degrees of power) as being something else, thus potentially reducing resistance against the actual structure through increasing ambiguity. Another example is tactic 4C-1B (see table 6.8 in chapter 6 for this detail) – *keep some debates only among peers in the management group*, which reduces transparency in online interactions. This action

[8] The projects, nonetheless, had been in development during the pilot study.

undermines occasional resistance against the reproduction of power structures derived from the *power systems – influence of sponsors* (carrier 4A-1). Also tactic 4C-1C (see table 6.8 in chapter 6), *require members to attend face-to-face meetings to participate in the management group*, creates obstacles to ordinary members' participation in the governance structure, indirectly supporting the reproduction of segregated decision-making processes.

Following the same reasoning, the tactics which enact enforcement mechanisms are social structures developed in a particular situation, in order to foster (or reduce the opposition to) the reproduction of segregated institutionalised structures. These mechanisms do not reproduce the segregated structures, but they enforce them mainly by means of punishment[9]. As explored in the literature, enforcement mechanisms are imposed by actors who have power in relation to the elaboration and change of institutions (Knight and Ensminger, 1998: 106; Scott, 1998: 316-317; Stinchcombe, 1968: 112, 186; DiMaggio and Powell, 1991a: 30-31; Nee, 1998b: 9-10; Nee and Ingram, 1998: 25). As stressed by Scott (2005: 467), in the process of institutionalisation, it is necessary to specify the actors who hold the beliefs and enforce the norms.

Tactic 4C-3, *exclude from debate within the management group those that do not agree with the leadership orientation*, for instance, undermines the resistance to sponsors' influence (*power systems*, carrier 4A-1). This tactic sends a message to members that opposing the sponsor in online interactions may have disadvantageous consequences. In addition, the tactic of *flaming members* who question the legitimate speech or group identity (from the viewpoint of management members) (5C-2 and 6C-3) is a social structure that may constrain members' free expression against leaders. Also tactic 6C-4, *expel members who do not agree with the mainstream identity*, used only in Remtea, is a

[9] The exception in the examples cited in this sequence is tactic 10C-1, which fosters segregation of decision-making by denying access to other solutions related to the appropriation of Internet tools. This study has also observed enforcement mechanisms by means of rewards, such as the actual and potential benefits sponsors offer directly and indirectly to members as channels for influencing community governance structures (see subsections 5.2.4 and 8.2.1).

strong enforcement mechanism to proscribe opposition to the management group. Further, this tactic enforces the leadership agenda, as the management group has mechanisms to block divergent opinions. Lastly, the *tactics of avoiding Internet tools (other than the discussion list and the website) that would foster transparency, participation, and less centralized decision-making processes* (10C-1), and *avoiding customizing websites and discussion lists in a more flexible way* (11C-1) are subtle ways of enforcing behaviour through framing how artefacts are appropriated.

Context: how agents react to specific contextual factors

The literature on new institutionalism proposes that social structures diffuse differently through settings, in accordance with their contexts (Weber, 2002 [1930]: 5-12; 32-33; Jepperson, 1991: 146; DiMaggio and Powell, 1991b [1983]: 74-76; Scott, 1991 [1987]: 174-181; 1992b: 161-174; 2003: 884-886). Scott (2005: 467-468) contends that a variety of patterned interactions emerge from situations in which people are exposed to ambiguities. Avgerou (2000: 235), studying the institutionalisation of technological innovation, argues that it is necessary to understand the cultural systems in which organizations are embedded, as institutional forces stem from each level: international, national, sectoral and local.

Indeed, some contrasts between the four cases, as presented in chapter 7, suggest that arguments and tactics emerge in specific situations. For instance, tactic 3C-2 (*ignore complaints against centralized structures*) is cited many times by Rebea members, a community that has faced some opposition to its governance structure (see subsection 6.1.3). In other words, members are more sensitised to noticing such a tactic in an environment in which many complain, than in a space in which few express disagreement with the governance structure.

Similarly, tactic 4C-3 (*exclude from debate within the management group those that do not agree with the leadership orientation*) is also only observed in Rebea. Most of the

citations[10] related to this tactic refer to a specific case of a previous core leadership member who had been excluded from debates and decision making after opposing the federal government (the community's main sponsor) publicly through the discussion lists. Members became aware of such a tactic only because of such a specific situation. It appears from other declarations, that this tactic had been used before, but members forcefully expressed their recognition of the norm through remarking upon the most cited case. It is of note that it was not a formalized punishment, as the exclusion was done through informal means (ostracism).

A specific case is also behind the emergence of tactic 6C-4 (*expel members who do not agree with the mainstream identity)*. The interviews show that this tactic was adopted only once by Remtea, in a specific case of a member whose behaviour was considered intolerable by leadership members. Thus the tactic had not been thought of beforehand, but emerged from a specific situation and has not been used again in relation to other members. It may happen, nonetheless, that communities expel other members in the future, if circumstances are conducive to the emergence of such a structure in a more systematic fashion.

Drawing upon new-institutionalist authors, these tactics of excluding members from management groups and expelling members from the community do not emerge from scratch, but from a shared historicity in which they make sense (Berger and Luckmann, 1967 [1966]: 72; Lanzara, 1998: 26-27). Furthermore, they emerge from an asymmetry of power between members, favouring those who control the enforcement mechanisms (Knight and Ensminger, 1998: 106-108; North, 1998: 249). In the studied cases, these new patterns reinforce the institutionalised procedure of segregating decision making. However, they may be enacted also in other circumstances which are not related to the segregation of decision making, as far as they are legitimised by these communities as desirable or appropriate (Suchman, 1995: 574; Scott, 2005: 465). From current evidence,

[10] Citations: Rebea01.14/16; Rebea04.03/04/07; Rebea13.14/15; Repea01.25; Repea02.21. As explained in chapter 5, Repea interviewees also refer to the same case in relation to Rebea, as some Repea members are also Rebea members.

it is not possible to conclude whether these new patterned behaviours, such as expelling members, will be legitimise in the long term.

Furthermore, it is interesting to notice that many of the emerged tactics are practices which are particularly related to the reproduction or embedding of segregated decision-making structures in the context of Internet-mediated interactions. For instance, the creation of segregated discussion lists (tactic 7C-1), which reproduces the segregation of decision-making processes (carrier 7A-1), and the organization of leadership peers through segregated lists (or private mails) (tactic 5C-1), which reinforces within the communities the legitimate authority some members have in society (carriers 5A-1 and 5A-2), are practices that depend on the technical features of the adopted Internet tools (carrier 10A-1), and the way they are customized (carrier 11A-1). In the same fashion, the exclusion of management members from segregated lists (tactic 4C-3), related to the reinforcement of power systems (carrier 4A-1), and the expelling of a member from the general list (tactic 6C-4), related to the reinforcement of mainstream identity (carrier 6A-1), are possible because the tools have technical features and are customized in such a way to permit management members to control who participates in these lists.

Indeed, the possibility of controlling gatekeepers (tactic 7C-2) also depends on Internet-mediated channels allowing some to be gatekeepers, thus listing others as ordinary members. In a more subtle manner, but still relevant, other practices draw upon the non-physical presence of Internet-mediated interactions to ignore members' contributions and complaints (tactics 5C-4 and 3C-2), and to set the agenda (tactic 5-3). As respondents highlighted (discussed in chapter 6), it is relatively easy in the electronic communication to ignore members' manifestations, and to change the themes in debate proposing new themes. Lastly, the way these communities organize themselves in the virtual environment is particularly prone to establish the 'legitimate' channels of communication. Thus the tactics of avoiding specific Internet tools and flexible forms of customizing them (10C-1 and 11C-1) are practices which control communication channels in this particular context in which Internet-mediated communication is the main mean of interaction.

8.1.3. Interactions between carriers, arguments and tactics

The empirical evidence of the four case-studies suggests that carriers are deeply interrelated to each other. As analysed by Scott (2003: 890-891), this happens because similar structures influence the process of institutionalisation in different ways, thus they can be analysed from regulative, normative and cultural-cognitive perspectives. Furthermore, different structures support each other in diverse situations, thus each assumes characteristics that make sense when considered in relation to the others. This condition is inherent in the adopted framework on carriers (Scott, 2001), as it proposes to separate regulative, normative and cultural-cognitive elements of institutionalised structures.

In this investigation, this is the case, for instance, of *regulative* and *normative artefacts* (carriers 10A-1 and 11A-1), as discussed above. The same artefact can be understood by its technical features (the inscribed code itself) or by the standardized way these features are customized. Both carriers are thus closely intertwined and interviewees often talk about artefacts in an ambiguous way, without differentiating the material features from the customization itself (also because some people do not have enough knowledge to understand the difference).

When a standardized customization is institutionalised, it becomes difficult to perceive alternatives, as it acquires a taken-for-granted status of how things are (Berger and Luckmann, 1967 [1966]: 71). Here again it is helpful to recall that institutions are supported simultaneously by regulative, normative and cognitive systems (Scott, 2005: 465; 2001: 51-52). Thus even when the focus is on one aspect, the others are also acting in the background (as discussed in section 3.1).

A similar situation is found in relation to *hierarchical schemas* (carrier 3A-1) and *standard operating procedures* (carrier 7A-1), which are closely related to each other. *Hierarchical schemas* have a taken-for-granted meaning, which appears in the interviews as a conception that it is natural that some people have more power in decision-making

processes[11]. The way these different degrees of power are manifested in routines is through the segregation of decision-making processes, which in the online interactions is done through the segregated discussion lists.

Other example of interaction between carriers is the link between *jobs and roles* (carrier 8A-1) and *identities* (carrier 6A-1). When discussing *identities*, members think closely about their association with government officials and academics, as they are at the same time, and inescapably, community members and government officials and/or academics. In explaining their governance structures and behaviour, members talk about their roles in the government and universities as also being their *identities*[12].

Sometimes multiple roles are contrasted, when the member is able to understand her beliefs and values (identity) as being different from the expression of opinion she would make for the sake of her job or role in society. Reasul13.08, for instance, identifies her position in the community as being a representative of a government office, thus she recognizes the action of avoiding expressing her own opinion. Other times the differentiation is not clear and for some members there is no difference at all between their identities and their role in society, at least in their discourse. This emerges from interviewees such as Remtea01, whose existence in the community is a continuation of her multiple-identity as an environmentalist, an academic and a member of a political party. In other words, in her discourse, she does not differentiate between her roles in these different spheres of her life.

The examples go further, for instance, relating *societal expectations* of having community representatives (carrier 2A-1) to the idea of *scripts* (carrier 9A-1) (taken-for-granted assumptions people attribute to roles). The twin reasonings that (i) society demands that the community has a formal representative and that (ii) an executive secretary has

[11] As explained in subsection 5.2.3, the term *hierarchical schema* recalls many other complex concepts, but in this thesis it is used with this limited meaning, in the light of the objectives of this study and the meaning interviewees have attributed to it.

[12] Roles in society may also be understood as identity (March, 1994: 68).

specific activities, such as representing the community, are very close. The difference comes from the way the statements are constructed. Whether the expectation derives from society, or from the script, both are related to a situation in which an executive secretary has the role of representing the community.

Although not exhaustive, the examples above help to understand why some definitions of carriers are very close, demanding effort to perceive the nuances in the meaning interviewees intend to convey, through the lens of the adopted framework. Thus the similarities between carriers are an inherent condition of this research following Scott's (2001) categorization, which differentiates social structures in their regulative, normative and cognitive proprieties. Indeed, Scott's categorization has been very helpful in exploring these nuances and intersections. Without this categorization, which stimulates the perception of the different aspects of carriers, it would be very difficult to develop such a complex picture, as presented in this thesis.

In addition, the empirical evidence suggests that, as well as carriers being interrelated, arguments and tactics also have similarities which cross the different categories. For instance, arguments 2B-2 and 2B-3 recall the role of the leadership group in *resolving conflicts* and *taking initiatives*, which have similarities with argument 7B-1, that *the management group should make decisions* for reasons of efficiency[13]; and also with argument 3B-1 that *it is difficult to manage the community without a hierarchical model.* All these arguments try to justify the fact that the communities have differentiation between leadership and ordinary members.

Another similarity comes from the arguments that *some members concentrate decision-making processes because they are more active and committed than others* (4B-3) and

[13] As discussed in subsection 6.1.7, argument 7B-1 many times is associated with the idea that the management group brings efficiency to the community (citations: Rebea06.09/13; Rebea07.20; Rebea08.11; Rebea09.16; Rebea14.18; Repea04.09; Repea05.05; Repea06.13; Repea07.06; Rebea08.07; Repea10.01; Repea11.04/10; Reasul15.05.). Note, nonetheless, that the argument sometimes is associated with other reasoning.

older members have created the community (or worked more), thus they have more legitimacy to make decisions (5B-2). Both arguments link the power and legitimacy to make decisions with the amount of work given to the community. Argument 6B-1 recognizes the relevance of identity, positing that *people are the same inside and outside the community*, which is close to arguments that jobs and roles influence members' behaviour because *people fear losing their jobs* (8B-1), and *people have commitment with their current jobs* (8B-2). Finally, both arguments related to artefacts are very similar: that *members do not know how to use Internet tools, thus the difficulty of appropriating alternatives* (10B-1); and that *members do not know how to use such tools in a more flexible way* (11B-1).

Focusing on tactics, some of the community leaders cultivate ambiguities to disguise the actual structures, such as keeping blurred rules about: (i) governance structures (3C-1); (ii) criteria for selecting management members (4C-1A); (iii) decision-making processes on general lists (5C-1); and (iv) categories of membership (6C-1). Tactic 4C-1C, *require members to attend face-to-face meetings to participate in the management group*, also has some proximity with tactic 12C-1, *make relevant decisions in face-to-face meetings* (which is associated with the idea of undermining the general discussion list as a space for decision making). In addition, there is convergence between the tactics of *keeping silent for not having legitimate knowledge* (5C-5), and *keep silent for disagreeing with the mainstream identity* (6C-5); and between the tactics of *avoiding Internet tools (other than the discussion list and the website) that would foster transparency, participation and less centralized decision-making processes* (10C-1), and of *avoid customizing websites and discussion lists in a more flexible way* (11C-1).

Again, Scott's (2001) framework helps to identify the nuances between similar arguments and tactics, to relate them to specific carriers, as developed in detail in chapter 6. Based on these cited interrelations, this investigation can substantiate the claim that the similarities between carriers, arguments and tactics are inherent to the proposed framework, as similar justifications and structures present nuances in relation to the kind

of carrier they are associated with, in accordance with their regulative, normative and cultural-cognitive aspects.

8.1.4. Valuation of Scott's framework

The previous discussion justifies the claim that Scott's (2001) framework is helpful in understanding the diffusion of institutions through Internet-mediated communities. The framework supports this study by identifying carriers of social structures, following Hasselbladh and Kallinikos's (2000: 699-702) suggestion of observing the role of durable social artefacts in the diffusion of institutionalised features. In other words, the adopted categorization offers a level of granularity, which permits a micro-level approach of the process of institutionalisation, instead of an abstract macro-level one (Czarniawska-Joerges, 1992: 56).

The focus on carriers permits the division of a general, abstract notion of an institution. In this investigation, the institutionalised procedure of segregating decision-making processes has been analysed through the 12 categories of carriers, thus exploring many different aspects related to the reproduction of such a structure. This choice was helpful in operationalizing this research, in the sense of permitting the elaboration of processes that would allow the observation of the processes of institutionalisation in the chosen settings (Babbie, 1998: 139).

Subsection 3.2.3, introduced the many authored discussion of the role of institutional carriers in the process of institutionalisation without a systematic classification. For instance, Weber (2002 [1930]) points out the relevance of religious groups, organizations, businesspersons, workers and middle classes. DiMaggio and Powell (1991b [1983]: 67-74) discuss legislation, curricula, technical requirements, accounting practices, performance evaluation and telecommunications and transport infrastructures. Meyer (1994: 36-44) focuses on ideologies, world-level organizations, nation-states and science (or knowledge). In these examples the role of carriers emerges clearly from the empirical

evidence, but these studies do not offer a pragmatic approach to studying the role of institutional carriers in other settings.

However, Scott's (2001) framework offers a systematic classification into 12 categories, which facilitates the conceptualization of institutionalised features across regulative, normative and cultural-cognitive pillars, distributed through symbolic systems, relational systems, routines and artefacts. Although this framework is a bounded system of categorization, it maintains flexibility, because of its variety of categories, as exemplified in this thesis. In the present investigation, this flexibility is explored when contrasting the categories with the empirical evidence.

Indeed, this researcher has adjusted the categories to the empirical situation, in order to understand which specific carriers are influencing actors in the reproduction of the studied structures. In contrasting the framework with the collected data, some carriers have emerged straightforwardly, such as the *legislation, jobs and roles* and *scripts*. Other carriers, however, have not been observed at all (such as *values*, *regimes* and *obedience to duty*[14]). And some carriers have demanded more effort to interpret their meaning in the specific cases, such as the *group artefacts*.

As explained in subsection 5.2.10, *objects complying with specifications* (10A-1) have been equated, in this study, with their inscribed, technical features favouring segregated decision making. The same artefacts, nonetheless, may be used in different ways in other settings, as their features may be customized to a range of possibilities. Thus the standardized, institutionalised way tools are customized constitutes a second category of carrier, *objects meeting conventions and standards* (11A-1), embedded in the same artefacts. Finally, the study recognizes a third category of *objects possessing symbolic value* (12A-1), which in the case of this study undermines Internet tools as a channel of communication, as members consider that in communication, Internet tools are less efficient than face-to-face interaction.

[14] Quoting from Scott's examples, presented in subsection 3.2.4. Other many examples could be cited in respect of other authors.

This study thus supports the argument that it is only by closely observing the context that the researcher may conclude which are the prevalent resilient social structures (Jepperson, 1991: 146; Avgerou and Madon, 2004: 175). Indeed, context is highly relevant to the way institutional carriers diffuse social structures (Scott, 2003, 2005; Weber, 2002 [1930]; Berger, Berger and Kellner, 1973) (see subsection 3.2.4). Scott's framework is thus flexible and complex enough to permit a broad categorization of carriers in context. At the same time, it has helped this researcher in exploring how agency (arguments and tactics) interacts with carriers in the specific contexts of study. The alignment of arguments and tactics with carriers, within the same categories, has facilitated the organization of findings and the elaboration of analysis, making clear the distinction between the roles of social structures and agency in the diffusion of institutions.

The strength of the chosen framework does not mean, however, that this investigation has not faced problems in reading the empirical phenomena through this lens. Any classification is a controversial way of reading the world, as the complexity of reality always implies that something is captured and something lost in categorizing (Bowker and Star 1999: 10-12). In this study, the best example of the difficulty of straightforward application of the framework was in the categories related to artefacts, as explained above (and in subsection 5.2.10).

Recalling this aspect, Scott (2001) suggested that some artefacts should be considered by their regulative aspects – by their mandated specifications. The studied communities, however, were not subjected to any restriction in adopting tools within a regulative, legal framework. Indeed, in practice, the communities could choose their tools or even create tools with any kind of specification. Thus the classification was too rigid to be applied in its entirety to the empirical cases studied here.

In order to disentangle this problem, this research has interpreted Scott's general perception on regulative artefacts, informed by academic studies that have explored the

relationship between technology and social structures, as well as the contrast between technological artefacts, norms and technology-in-use (Avgerou, 2002; Orlikowski, 2000; Kallinikos, 2002; Doherty, Coombs and Loan-Clarke, 2006; Faraj, Kwon and Watts, 2004; Souza *et al.*, 2004; De Cindio, Gentile and Redolfi, 2003; Orlikowski and Barley, 2001). From this contrast, the adopted differentiation between artefacts as technical features and artefacts as institutionalised customization emerges, as explained above. For this researcher, the possibility of doing such an adaptation reveals more about the flexibility and robustness of Scott's framework than about its weaknesses.

8.2. Theoretical contribution: Introducing agency to Scott's framework

Chapter 3 introduced the concept that the process of institutionalisation suggests both that social structures influence actors' behaviour, rather than imposing themselves upon actors, and that agency is associated with the reproduction as well as the change of institutions (Scott, 2001, 1998; Jepperson, 1991; Powell, 1991; Avgerou, 2002). When focusing on institutional carriers, the emphasis falls upon the inertial aspects of social structures, as they constrain behaviour, providing stability and order. Complementarily, institutions also empower activities, fostering changes. The outcomes of these contrasting forces are ambiguous, especially through time (Scott, 2005: 467-468; March and Olsen, 1989: 65; Peters and Pierre, 1998: 567; North, 1998: 249).

Considering the need to balance structure and agency, scholars point out the proximity of new institutionalism to Giddens' structuration theory (Scott, 2001: 67, 75; J. Scott, 1995: 214; Barley and Tolbert, 1997; Klijn, 2001). For Giddens (1979: 70; 1984: 25, 374), actors constitute social structures through interaction and they are themselves constituted by the social structures. Agency and social structures constitute each other through interaction, thus social structures foster the emergence of behaviour patterns, although there is always space for differences in interpretations which change social structures (Giddens, 1979: 64-66; 1984: 14-15; Scott, 1998: 17-18). This concept is close to Berger

and Luckmann's ([1966] 1967: 70) conception of social order as being an ongoing human production: as a product of human activity.

In this mutual-dependency between social structures and agency, the context must be considered in order to have a better understanding on the process of institutionalisation. As introduced in subsection 3.3.2, institutions need to be interpreted if they are to be applied in ambiguous situations, thus new social structures emerge from the processes which are dynamic and context-dependent (March, 1994: 61, 68, 78-79; March and Olsen, 1989: 24, 58-65; Mantzavinos, 2001: 90-94; Weber, 2002 [1930]: 5-12; 32-33; Berger, Berger and Kellner, 1973: 92). For Scott (2005: 466-467, 471), different logics compete in institutional environments, which in practice means that actors have the potential for reconstructing rules, norms and beliefs – thus institutions not only reveal the nature of the reproduction and collapse of social structures, but also the creation of new ones.

This study is inspired by this idea of balancing the emphasis on social structures and agency in the understanding of processes of institutionalisation. As discussed in subsections 8.1.1 and 8.1.2, the empirical evidence suggests that social structures influence behaviour, through institutional carriers, and that agency reproduces social patterns as well as creates new ones, in order to embed segregated decision-making processes in specific situations. The role of agency in this empirical investigation is explored through two constructs: *arguments* and *tactics*.

Arguments are important in embedding the carried social structures in the situation of the studied communities, especially in the case of reproducing structures that are inconsistent with an ideal model of network organizations. The arguments interpret the carrier as a way of legitimising the reproduced social structure of segregating decision-making processes within these communities (as discussed in section 7.2). This process of legitimisation of institutions is inherent in the diffusion and change of social structures (Scott, 2005: 467-468; Mantzavinos, 2001: 95; Lanzara, 1998: 20; Jepperson and Meyer, 1991: 226-229; March, 1994: 69-70). Furthermore, arguments recall that there are

sanctioning mechanisms associated to social structures, such as the potential of *receiving government funding* (1B-1), or the risk of *losing their jobs* (8B-1) if online behaviour is not compatible with members' roles in society.

The role of tactics can be better understood as describing how people act in a situation in the presence of social structures. The conflict between institutions and power structures implies that institutions need to be interpreted in any given situation, as they are not reproduced automatically or without ambiguity (March and Simon, 1993 [1958]: 12; Scott, 2005: 466; 1994b: 76; Meyer, 1992: 263; DiMaggio and Powell, 1991a: 29-31; Avgerou, 2002: 39-44; Jepperson and Meyer, 1991: 226; North: 1990: 68, 101; Stinchcombe, 1968: 112, 186). As described above, the tactics work in this direction, of reproducing or adapting (changing) the carried social structures in the affected situation.

The theoretical lens of new institutionalism and structuration theory, and the empirical evidence present in this investigation justify claims that the understanding of processes of institutionalisation may be improved through frameworks which include both the structural proprieties of institutions and agency. More specifically, following the analysis adopted in this study, I suggest adding other elements to Scott's (2001) framework on carriers, i.e. arguments and tactics, which complement the understanding on how agency draws upon social structures.

Indeed, the present study applies the suggested framework of categories, which associate carriers with arguments and tactics, separating the elements that carry structures from the justification of procedures and the observed patterned actions. Arguments and tactics have thus specific participation in the diffusion of institutions, similar to Barley and Tolbert's (1997: 105) proposition of separating actors' interpretation of their behaviour from their observed pattern of interaction. These constructs also respect the chosen framework on institutional carries. As proposed by Scott (2003: 884-885; 2005: 468), the diffusion of institutionalised features depends on the way actors interpret ideas and negotiate activities in their situations

Strang and Meyer (1994: 100-109) and March and Olsen (1989: 40-42) argue that, behind the diffusion of institutions, there is the fundamental work of constructing meaning, making sense of a world of uncertainties and ambiguities, which should be considered in related studies. Indeed, in observing the arguments as interpretations, it becomes easier to understand the cultural-cognitive framework of the actors in relation to the specific institution (Meyer, 1992: 264). Scott (2005: 471) strongly suggests that institutional arguments help to understand the emergence of new models of organizing.

Tactics, complementarily, permit the exploration in practice of the dynamic aspects of the diffusion of institutions, following how carriers influence the patterns of interaction of different actors. In emphasising the role of agency in the situated translation of carried social structures, it is possible to observe how new social structures emerge from institutional features and which contextual forces and actors are related to these changes (Lanzara, 1998; Ingram, 1998: 258, 262; Powell, 1991: 199; Jepperson and Meyer, 1991: 226-229; Scott, 1994b: 75-76).

Naturally, tactics are patterns of interaction at different levels of institutionalisation. Berger and Luckmann (1967 [1966]: 71-79) indicate that the enactment of new social patterns (externalization) is the first step in the process of institutionalisation. The full institutionalisation, nonetheless, depends on whether these patterns gain historicity (objectivation) and whether they are 'retrojected' into consciousness through socialization (internalisation). Thus only over time one can conclude whether a patterned interaction has become fully institutionalised.

The proposed framework thus understands the reproduction of institutions as a dynamic process, agreeing with Giddens (1979, 1984) that structures only exist in as much as people reproduce them. Scott (2005: 471) suggests, in relation to the conflictive forces in social life, that institutions demand permanent effort and energy even to prevent their decline or destruction. Thus even when institutions are reproduced fully, there is a dynamic process of active agency behind the repetition of patterned interactions. Thus the focus on tactics, as applied in this empirical investigation, permits to investigate situated

agency differentiating how social actors, in the interaction with social structures, engage in processes of reproducing, changing and deconstructing institutionalised organizational forms.

Furthermore, the proposed framework maintains the capacity for following the process of institutionalisation at the micro-level (Berger and Luckmann, 1967 [1966]: 83; Hasselbladh and Kallinikos, 2000: 699; see also Czarniawska-Joerges, 1992: 56), but with a greater analytical power. To be sure, carriers are repositories of institutions in the form of specific rules, norms and cognitive structures (Scott, 2001). However, before being reproduced in a given situation, the carried social structures are still "memory traces" in one's mind, related to "how things are to be done" (Giddens, 1979: 64; see also 1984: 17, 25, 377). It is thus informative to follow the effective emergent structure to understand the degree to which the carried institutional feature is reproduced in the situation.

In addition, the proposed framework necessarily embeds the role of context. As discussed through this thesis, agency interacts with social structures in specific situations. The interpretation of social structures thus depends on the shared conception of reality in context (Berger and Luckmann, 1967 [1966]: 15). As argued by Suchman (1987: 179), context is endogenous to action; not only making action possible but also the coherence of action cannot be explained by institutions alone, but by the interaction of actors in a situation. Thus when explaining arguments and tactics in particular settings, under the influence of carriers, actors also reveal the relevant contextual aspects from their point of view. At some level, these contextual elements bring macro-elements to the analysis as well, as far as they are relevant in explaining institutions in a given situation.

Lastly, tactics may be understood as *carriers-in-practice*[15], as a lens to observe the enactment of the respective social structures. This perspective draws upon Orlikowski's (2000) proposition of adopting a practice lens to investigate how technology is used, in order to map the enacted social structures with their emergent proprieties. In this work,

[15] This term has been suggested by Dr. Edgar Whitley, in discussion related to this thesis.

inspired by structuration theory, Orlikowski concludes that technological structures emerge from people's situated interaction with specific pieces of technology – thus technological structures are not "embodied in technologies simply waiting to be appropriated" (ibid: 407).

In this thesis, the same reasoning of focusing on emergent structures enacted in practice is used not only in relation to artefacts, but also to the other categories of carriers. Thus, artefacts, rules, norms, cognitive schemas, jobs, scripts and other carriers are repositories of social structures, but it is in practice that actors decide how to interpret them in a given situation, considering all the conflicting institutional features, power structures and contingencies in the specific context. This focus on carriers-in-practice offers a necessary balance between social structures and agency, as nothing is taken for granted but the actual patterned behaviour.

8.3. Research limitations

This investigation started from solid ground, following as it did a pilot study, a theoretical framework and an extensive literature review on virtual communities and research design and methods. Still some obstacles may have interfered with its results. Thus below I will examine the strengths and the weaknesses of this research (complementing the discussion on methodology, presented in chapter 4) and believe this will allow the reader to evaluate the whole research through these lenses.

The interpretive orientation and the qualitative approach, through semi-structured, in-depth interviews, adopted by this research were very helpful in understanding the phenomena in question. The level of explored detail, describing a complex phenomenon, about which there was no previous knowledge, would not be possible without intensive interactions with social actors involved in the studied settings.

The choice of a multiple case-study strategy was advantageous. The original objective of exploring similar and contrasting results (literal and theoretical replications) was fulfilled (Yin, 2003: 47; Hakim, 2000: 62; de Vaus, 2001: 240) (discussed in section 4.2). In addition, the strategy helped to extend my theoretical perception (Yin, 1981: 63; Benbasat, Goldstein and Mead, 1987: 369-370, 373) of new institutionalism, as the different ways of embedding social structures in different settings called attention to the role of agency, leading to the development of a theoretical contribution (presented in section 8.3).

There are two other aspects of this research design and execution, nonetheless, which deserve further critical evaluation. The first subsection summarizes the conceptualization of the studied communities in order to frame the context in which the findings may be understood. The second subsection discusses some contextual ambiguities present in the empirical evidence.

8.3.1. The conceptualization of the empirical object

It is necessary to clarify the limits of the present investigation in considering its empirical objects. The four studied Brazilian environmental-education Internet-mediated communities have characteristics which make them particular, although not unique:

a. These collectivities are conceptualized in this research as communities, following Graham's definition (1999), as it is possible to define their boundaries, based on the presence of common interests, rules and voluntary participation (section 2.2). They are thus different to other virtual collectivities which do not have such clear boundaries.

b. These communities are informal associations and do not have legal existence. For this reason they receive financial and material support through organisational members, who assume the role of anchor organization leaders and who become legally accountable for contracts (when they exist).

c. They have a particular level of embeddedness in the social tissue that is not necessarily the case in other virtual communities. Although members understand their communities as being independent social movements (networks), they have links with formal organizations, which support the community from the minimal level of providing a server for a website up to supporting face-to-face meetings at national level.

d. Membership is not anonymous in these communities. Although I could not confirm if this rule is always enforced, all interviewees in this investigation interact in these communities with their real names. Thus the role of each member in society is transparent for all, at least within the group.

e. These communities have decision-making processes to support online and offline activities which demand collective coordination. This would not be the case for virtual communities whose members do not engage in common activities.

f. The Internet-mediated tools, especially the discussion lists, are the main communication channel in these communities.

It is not possible to be certain which of these aspects are essential in a conceptualization of these communities, which would permit generalization from this study to other settings in relation to the observed process of restrict institutionalisation. Indeed, as discussed in subsection 4.4.3, I agree that in qualitative research, the understanding of a phenomenon may only inform our knowledge about other settings, thus I avoid attempts at generalizing findings and analysis to other spheres.

Within this limit and with regard to the carriers that have been identified in this investigation on decision making, it appears that the level of interaction of these communities with, and dependence on, other organizations (government, universities and NGOs) is important in making them more susceptible to the influence of the observed

institutional carriers. Also, that these communities are not anonymous and some members have strong social links outside the virtual environment may reinforce the role of the observed carriers. Finally, that the nature of their interaction involves collective action, and thus decision-making processes, may be related to the kind of observed phenomena, since interviewees identified cognitive difficulties in coordinating action without having segregated decision-making processes.

These are only suppositions derived from my interaction with the data. This research does not aim to compare these communities with other settings in order to try to offer a better understanding of which factors may interfere with a community's greater or lesser readiness to diffuse institutions. Still, these reflections may inform future research that studies communities in other virtual settings and allow contrasts between these communities and others.

8.3.2. Contextual ambiguities

In spite of the complexity of the studied phenomenon, the level of ambiguities in this research is very low and does not compromise its results. Two facts have contributed to the good quality of the empirical evidence: the elaboration of a pilot study before the main investigation (as explained in subsection 1.2.1); and the number of interviewees (58 members, without considering the interviews for the pilot study), which brought a diversity of viewpoints to this research.

Still, as discussed in chapter 7, there are a few situations in which differences between cases have been observed and where the empirical evidence does not permit an exploration of associations with the contextual elements, which would help to understand the phenomena. In a few other situations, the empirical evidence permits more than one interpretation about possible associations.

For instance, tactic 5C-1, *organize leadership peers to give support to each other on the general discussion list*, has only been cited by Rebea and Remtea members. As discussed in subsection 7.1.5, it makes sense that Reasul members do not cite this practice, as its ordinary members do not participate in decision making. The contextual ambiguity remains with Repea. As argued in the cited subsection, there is no empirical evidence that the result is biased because of the selection of interviewees (issue discussed in subsection 4.3.1). The available data, nonetheless, does not suggest any association between this omission in Repea and contextual factors.

A second example is related to tactic 4C-1D (*undermine the legitimacy of ordinary members as potential leaders*). There are contextual factors which may indicate that Reasul leadership is less concerned with this practice: it could be either because ordinary members do not challenge Reasul leaders (recalling that they are clearly excluded from decision-making processes); or because management members ignore the complaints of ordinary members (recalling that Reasul's general discussion list is moderated). These both interpretations are grounded in empirical data, open thus space to certain level of ambiguity (as discussed in subsection 7.1.4).

In relation to these ambiguities, firstly it is important to clarify that this research does not aim to explain causal mechanisms between context and social structures. Furthermore, the questions proposed to respondents were open (in depth, semi-structured interviews), permitting them to explore the relevant aspects of their governance structures in accordance with their interpretation (discussed in section 4.1, and subsection 4.3.4). I explored the details of the practices they related, without requiring them to describe their perception on practices they did not refer to spontaneously.

The differences between cases are pointed out, however, and some contrasts appear to be associated with contextual factors. These associations are though exploratory in nature. The qualitative approach adopted in this research does not aim at, or allow, the testing of such relations, or the drawing of conclusions about reasons and causes. It simply explores possibilities. Thus without affirming that an interpretation is the correct, this

research contextualizes findings and reports ambiguities clearly, permitting deeper accountability of procedures and conclusions (Taylor, 2003: 182-184; King, Keohane and Verba, 1994: 31-32).

Lastly, in spite of the general quality of this investigation, in hindsight I have reflected that dividing the data collection into two distinct periods would improve its empirical data, especially allowing for the exploration of the contextual factors in greater depth and clarifying specific doubts. However, it is necessary to add two caveats about conducting a second set of interviews. Firstly, new ambiguities are likely to emerge from new interviews; such a likelihood is inherent in qualitative research. Second, in a second round of interviews, the investigator might be more tempted to tilt the findings in the direction of her initial understandings.

Naturally, the researcher always has a level of influence on interviewees (Mason, 2002: 64, 68; May, 2001: 127; Klein and Myers, 1999: 74; Walsham, 1993: 8). The point thus is not to avoid a second set of interviews in future research, but to be aware of the risks of constructing an inferior picture in spite of greater effort. Even bearing this in mind, it appears that a second round of data collection could contribute to reducing ambiguities.

8.4. Concluding remarks on contributions and future research

In a broad sense, this research contributes directly to the fields of *Internet* (*new media*) and *organization studies*, considering its empirical object (Internet-mediated communities) and its focus on governance structures. It also contributes to *new institutionalism*, in applying Scott's (2001) framework to understand a virtual environment and in proposing the addition of elements of agency to the categories of carriers of social structures. Finally, this study contributes to the field of *information systems*, as it focuses on social structures that emerge from Internet-mediated interaction and also offers a broad discussion on the role of Internet tools as carriers of institutions in these environments.

In more specific terms, this research makes other contributions. Firstly, this study responds to Wellman's (2004: 127) suggestion to adopt a theory-driven approach to investigate an Internet phenomenon. Reviewing ten years of studies in this field, Wellman describes most research as descriptive or exploratory and that it is time to direct investigation through theory. This research is driven by new institutionalism, as the pilot study suggested that segregated decision-making social structures have diffused through Internet-mediated communities.

The theory-driven approach adopted helped the research design and operationalization, as the research question and the interview guide were clearly defined. Compared to my exploratory pilot study with these communities, having a framework permitted me to focus more deeply on the relevant evidence (Walsham, 1995a: 76; King, Keohane and Verba, 1994: 29). Commencing from the concept that institutions are reproduced by agency in a specific context, I formulated questions to explore their governance structures in a given situation (Giddens, 1979: 69; 1984: 17; Scott, 2001: 67; Manicas, 1998: 318, 320; Walsham, 1993: 53-55; Avgerou and Madon, 2004: 162; Sayer, 2000: 17).

Secondly, this research helps to address the gap in the academic literature on virtual communities and their related institutional influences in these settings, especially in relation to their governance structures, as discussed in chapter 2. The empirical evidence suggests that institutional carriers influence the diffusion of social structures through online environments, in spite of the many differences Internet-mediated interactions have in relation to those conducted face-to-face, at least in the studied settings. Furthermore, this study discusses how social structures and agency interact empirically to diffuse institutions.

Based on this empirical contribution, I suggest introducing agency (arguments and tactics) to Scott's (2001) framework, associating them with institutional carriers. This amendment produced a better understanding of the diffusion of social structures. This association may help other researchers to understand the interplay of structures and agency within a single framework. To be sure, the literature on new institutionalism

accounts for social structures and agency, as discussed in section 3.3. The argument here is that to link agency with specific carriers enables an understanding in practice of how social structures are reproduced (or changed) at the micro-level, by observing interpretations and actions directly related to specific carriers. To this end, the concept of carriers-in-practice is suggested, to differentiate clearly between the carried social structure and the observed enactment of similar or divergent patterned behaviour.

The suggested extended theoretical framework may be applied in any investigation of institutionalisation, being an analytical generalization from this study (Yin, 2003: 10, 32-33). Thus although this research starts from a theory driven approach, it has kept enough flexibility to expand its initial conceptual framework (Walsham 1993: 7; 1995a: 76, 79-80; Vaughan, 1995 [1992]: 195; May, 2001: 127; Fontana and Frey, 1994: 367; Rubin and Rubin, 2005: 32-37).

Thirdly, I suggest how to interpret artefacts as carriers of institutions in the studied virtual communities (subsections 5.2.10 and 8.1.4), utilizing the flexibility offered by Scott's (2001) framework. For example, the differentiation between artefact as its technical features (10A-1) and artefact as institutionalised customization (11A-1) is helpful in understanding how the same piece of technology embodies both these carriers as repositories of social structures. Still, the way people use this artefact is a second step that, in this study, appears in the discussion of tactics, which are the modes of appropriation of a social structure through agency in a given setting (which is closer to the idea of technology-in-use, proposed by Orlikowski, 2000). This conceptualization of artefacts may help other researchers to contextualize the framework on institutional carriers in computer-mediated settings.

Fourth, this research contributes to the debate on network versus hierarchical forms of organization in virtual communities, although it is not the objective of this research to explore this contrast. Still the pilot study and the main investigation both suggest that these communities struggle to accommodate two parallel models – the ideal of a network organization versus the actual practice of vertical decision-making structures. Based on

this empirical data, future research could explore this loose coupling of paradoxical structures, which could be related to the processes of legitimisation of these communities in society (Meyer and Rowan, 1977) (see further detail on this theme in subsection 8.4.1).

Lastly, this research indicates that there is an interaction between carriers, arguments and tactics, despite the diverse nature of these categories, that is worthy of continued study (8.1.3); it is important to understand carriers, arguments and tactics in their complex interaction rather than in isolation. Indeed, Scott (2003: 890-891) suggests the need to investigate how institutional carriers are combined in different contexts. The interactions presented in this dissertation point to the possibility of creating a more comprehensive approach to the diffusion of institutions through carriers. This study presents the evidence for going further in this direction.

8.4.1. Future research

Drawing upon this research, I would like to suggest other studies which may continue to expand on the themes presented here. This section thus is very modest and aims mainly to argue that this study may also be useful for the development of future research, furthering the present contribution to the existing scholarly literature.

Firstly, reflecting on the homogeneity of the studied communities (subsection 8.3.1), I suggest elaborating a comparative study between these collectivities and a contrasting set. Naturally this first study has been fundamental in establishing solid knowledge on the role of carriers and agency, in a virtual setting that reproduces institutionalised, segregated decision-making processes. Using these findings as a foundation, further research could explore the contrast between the studied communities and other virtual collectivities that are less dependent on formal organizations. Indeed, Indymedia[16] would be an interesting contrasting case, as it is a setting known for its more democratic,

[16] http://www.indymedia.org

network-like decision-making structures, but which is able to coordinate collective efforts on a global scale (Pickard, 2006; Polletta, 2002) (discussed in section 1.2).

Secondly, community members revealed the presence of a loose coupling process of having two parallel models, the ideal of a network organization in contrast with the enacted practice of reproducing instances of hierarchical models. This phenomenon resembles, at some level, the one described by Meyer and Rowan (1977), of organizations which keep both formal, rational structures, so as to gain legitimacy in their relational networks, and conversely informal, efficient ones to conduct day-to-day activities. The two models are kept together through loosening coupling strategies.

Indeed, the studied communities make a huge effort to sustain a discourse of having network governance structures, which are legitimate to social movements around the world (as discussed in chapter 1). Thus an interesting study, based in new institutionalism, would be to investigate the network model as an institution, similar to the rational model discussed by Meyer and Rowan. The empirical evidence suggests that these communities cultivate the ideal model as a way of legitimising themselves in their relational networks. It is necessary to develop, then, a further understanding of the institutions which diffuse such a network model as legitimate, in order to contrast this with the observed segregated decision-making models.

Thirdly, the findings suggest that the communities are subject to power systems, which possess instruments of enforcement (such as reward and punishment mechanisms), fostering the diffusion of social structures in these collectivities favourable to those external bodies exercising this power. This poses a question about what collective interests keep ordinary members and leaders together. From the interviews, it is not difficult to understand that members are rewarded and punished by power systems; what is not clear is why these communities, embedded as they are in broader social systems, are attractive to members.

In other words, leaders and ordinary members perceive keeping these Internet-mediated structures in their current form as a worthy objective, but it could be otherwise. Given the prevalence of Internet channels in these communities, ordinary members could rebel at any time against the leaders by creating competing communities, but they do not do so. Again, new institutionalism may help to understand how these communities are located in broader institutional environments, in which being a member and conforming to rules makes sense. It would also be informative to research the phenomenon from the point of view of power structures. As conceptualized by Foucault (1980: 98), all individuals are nodes who actively articulate the circulation of power through social networks. Thus it is important to understand the benefits members gain from belonging to these communities as an exercise in power and resistance.

Finally, this investigation also calls attention to the role of artefacts in the elaboration of social structures. Reflecting on the many times respondents reproduce behaviours in order to comply with enforcement mechanisms, it would be enlightening to compare the environment created by the Internet tools with the idea of the panopticon[17]; extending Zuboff's (1988) description of a computer enabled panopticon in a single geographical workplace, as computers permit a greater level of control and surveillance[18], to a distributed community.

As proposed by Foucault (1991 [1977]: 187, 200; 1980: 148-155), the panopticon works as a mechanism of disciplinary power: people subjected to such a structure of permanent

[17] The panopticon is an architectural model, created by Jeremy Bentham, which makes prisoners permanently visible to observers. As the prisoners are not able to know when they are being observed, they act as they are always being observed, to avoid punishment for misbehaviour. See Foucault (1991 [1977]: 200; 1980: 147-155).

[18] In chapter 9, Zuboff discusses how computers may increase surveillance capacity, also using the metaphor of the panopticon. The author, nonetheless, does not take it for granted that techniques of control and surveillance would be successful in any setting. She emphasises that computers also expose managers to the scrutiny of others, and that the enacted social structures, emerging from interaction in computer-mediated environments, depends on the prevalent power structures. In sum, Zuboff argues that it is necessary to analyse the empirical situation to conclude the impact of computers in organizations.

surveillance internalise the rules and become their own overseer. In the discussion of power relations, it is important to investigate how these virtual communities are located in society as an instance which exposes part of the social interactions to the surveillance of the collective and how this affects members' identities within and outside the virtual environment. In other words, the interaction through these virtual communities may have affected the power structures in society. Such an investigation will provide insights into current concerns about the influence of social networking communities on the fabric of society and the changing nature of inter-personal relationships in non-computer mediated environments.

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