

## Were Medieval Corporations Designed? An Analysis of Urban Guild and Confraternity Statutes

### ABSTRACT

*Institutions are commonly understood as social rule-systems, and rules as humanly devised constraints and incentives that structure the interactions of individuals. The creation of institutions for collective action is thus regarded as the outcome of intentional human design. Optimal institutional design, therefore, has become a major concern for policy-makers and scholars. Intentional explanations for the origins of or changes in collective institutions, however, are problematic for at least two reasons. Firstly, institutions often have no single designer and are too complex to be designed in one step. Secondly, institutions do not evolve in a vacuum: their design is shaped by accidental circumstances or the result of a path-dependent development. This paper addresses the question of institutional design with a two-fold goal. First, it explores the possibilities of developing an alternative understanding of the evolution and design of institutions, drawing on recent developments in evolutionary theory. Second, it develops a case study to test the possibilities of this theoretical approach. To this end, the statutes of occupational guilds and religious confraternities in late-medieval Ghent and Leiden are examined. The qualitative analysis of these sources shed light on the question as to how the rules that shaped these cooperative institutions were designed, adapted and transmitted, and which internal and external pressures explain the selection of rules. In more general terms, the aim is to gain better understanding of the mechanisms behind the replication of rule-systems, and of the grammar of cooperative institutions that explain their flexibility and resilience.*

### KEYWORDS

Institutional Design, Statutory Rules, Occupational Guilds, Religious Confraternities, Middle Ages, Evolutionary Theory

### INTRODUCTION

The subtitle of Elinor Ostrom's *magnum opus* contains the word "evolution", but it is used in a casual way to refer to the gradual process of institutional change. It is in her later work that she shows a clear interest in developing an evolutionary theory of institutions. In an article on the evolution of social norms, she acknowledges the relevance of evolutionary theory for her research by stating that "[i]ndeed, recent developments in evolutionary theory – including the study of cultural evolution – have begun to provide genetic and adaptive underpinnings for the propensity to cooperate based on the development and growth of social norms" (Ostrom 2000, 154). Ostrom returns to this point in her *Understanding Institutional Diversity*, drawing on evolutionary insights to explain the emergence and survival of norms, as well as why some participants in collective-action problems are co-operators (Ostrom 2009, 125-31). In her search for tools for analysing the institutional dynamics of collective action, Ostrom repeatedly refers to evolutionary theory, thereby subscribing to the position that "[w]hile rule (and norm) systems can evolve, their evolution and that of any cultural phenomena involves different mechanisms from those involved in the evolution of species" (Ostrom and Basurto 2011, 235).

Thus, with the goal of analysing institutional design and change, Ostrom draws from three different strands of evolutionary approaches to understanding human behaviour and social norms. First, she adopts an indirect evolutionary approach to explain why actors with different preferences, particularly conditional co-operators adhering to inherited social norms, can survive in social dilemma situations. Second, influenced by dual inheritance theory, she endorses the idea that culture evolves through a process of variation and selective retention. Cultural transmission, in this view, is a process parallel to and separate from genetic transmission. This means that humans have at least two systems of heredity. Following from this insight, the third approach claims that institutional change can be explained within an evolutionary framework. In line with this approach, Ostrom suggests that the rule-systems (or institutions) that govern human interaction can be understood as the result of a process of selection of rules, norms and strategies (or the grammar of institutions).

The idea that economic, social, and cultural evolution all conform to the principles of natural selection is not novel, and has found increasing receptivity among economists and social scientists (e.g. Runciman 2009; Hodgson and Knudsen 2010). Ostrom also recognises the significance of evolutionary theory for identifying and explaining institutional change, but with her strong focus on improving the performance of institutions, she is keen to point out possible impediments. Above all, she emphasises a key-difference between biological and cultural evolution: “[i]nstead of blind variation (...) human agents try to use reason and persuasion in their efforts to devise better rules, but the process of choice always involves experimentation” (Ostrom, 2012). Thus, apart from the question to what extent the evolution of institutions is driven by intentional and purposive action of individuals, the methodological issue is raised whether evolutionary theory as a general theoretical framework can be helpful in understanding the mechanisms of institutional change in order to improve their performance. In other words, the application of the principles of natural selection to institutional evolution still needs to be subjected to the sort of rigorous empirical testing which is so typical of Ostrom’s own approach and work.

Several theoretical and empirical issues are at stake in reconciling evolutionary theory with the Institutional Analysis and Development Framework, but this paper only addresses the crucial issue of how institutional design comes about. The focus is on a specific case study: the design process of medieval institutions for collective action; more precisely, the occupational guilds and lay confraternities in the cities of Ghent and Leiden in the later Middle Ages. The main question is in which ways these urban institutions can be regarded as having been designed, considered especially in the light of evolutionary theory. To this end, the preserved statutes of the guilds and confraternities will be analysed; on the one hand, to establish in which contexts these statutory documents were drawn up; on the other, to determine the types of rules that shaped these institutions and how they were reproduced and adapted over time. By analysing examples from different medieval cities, it can also be demonstrated to what extent local factors and chance shaped the design features of particular guilds and confraternities, as opposed to their general institutional characteristics.

## HISTORICAL CONTEXT

Before turning to the relevant methodological debates and the analysis of the empirical data, it might be helpful to provide some historical background to the case studies. The guilds and fraternities in late-medieval European society were rooted in a long institutional tradition of voluntary association. In the early and central Middle Ages, voluntary associations of different kinds emerged, often described as *coniuraciones* (Oexle 1996). These groups were bound together by personal oaths, and on the basis of parity of members. This institutional

model was copied and adapted to new needs and different contexts; as such it became the basic legal form for the later urban communes, merchant and craft guilds, religious brotherhoods, and universities. Significantly, these corporations (*universitates*) were regarded as having legal personality, with their own rights and duties distinct from those of their members. Despite their common characteristics and legal form, these bodies varied widely in terms of objectives, autonomy, and internal, constitutional rules (Reynolds 1997, 67-78; Van Zanden 2009, 53-5). Medieval corporations are often understood as having balanced the values connected to personal liberty and market exchange, which emerged simultaneously in the towns and cities (Black 2003, 34, 237). In this paper, the existence of medieval guilds and fraternities are not taken as a given, but rather understood as the result of group solidarity. Solidarity, in its turn, is defined as resulting from voluntary cooperation among individuals with shared interests, who devise rules to ensure that group members comply with the agreed obligations (Hechter 1987, 18, 39). In this sense, medieval corporations guaranteed the continued existence of the cooperation that produced them the first place.

The functions and activities of medieval guilds and fraternities are not easily defined. Guilds were not exclusively occupational associations, even though their core tasks concerned the regulation of the members' trades or crafts and the organisation of markets. In addition to this wide array of economic activities, occupational guilds could serve political ends or fulfil socio-cultural purposes. Guilds participated in religious and civic festivities and offered their members some form of devotional services, mutual aid and sociability (Lis and Soly 2006). Brotherhoods or confraternities were lay associations that focused more on the devotional lives of their members, providing burial and memorial services for deceased members. They also tended to the needs of living brothers and sisters by providing sociability and mutual support, ranging from legal assistance to the provision of dowries. Some confraternities extended their charitable works outside the limits of their membership. But again, these associations were very diverse in terms of targeted membership, geographical scope, and socio-religious activities (Black 1989, 23-49). Despite their differences, however, guilds and fraternities are not always easily distinguishable. Some guilds started out as fraternities, while almost all of them had a fraternity at their heart. The membership of guilds and their fraternities did not necessarily overlap, but both types of corporation were often deeply rooted in parishes or neighbourhoods (Epstein 1991, 37, 52, 156-9). The entwinement of the many dimensions of corporate activity in the Middle Ages meant that their influence on the organisation of urban society and the lives of townsmen can hardly be overestimated.

The significance of corporations for the history of Europe is nevertheless much debated. On the one hand, historians argue that cooperative institutions were essential to economic growth and socio-political stability. Occupational guilds were conducive to market exchange, protected property rights, and facilitated the transfer of knowledge, technology and information. Likewise, like other voluntary associations, they fostered habits of cooperation, and as such improved "the efficiency of society by facilitating coordinated actions between individuals and groups" (Stabel 2004; Greif 2006; Van Zanden 2009, 54; Terpstra and Epstein 2009, 3). On the other hand, historians are keen to point out that the proliferation of cooperative institutions alone does not adequately prove their general efficiency. Merchant and craft guilds, for example, protected group interests against the deficiencies of the market, but in this way actually hampered the development of strong market institutions. Guilds and brotherhoods could also be vehicles of particular political interests or popular dissent, acting against the common good of (urban) communities. For this reason, corporations were closely monitored by the secular and ecclesiastical authorities (Ogilvie 2005; Black 1989, 60-2). However it may be, both stances actually assume that medieval corporations, owing to their

design, were relatively flexible institutions and adaptable to changing political and socio-economic conditions.

The guilds and confraternities of Ghent and Leiden serve as case studies in this paper for the analysis of the design process of the rules that governed medieval corporations. In the later Middle Ages, these two cities were part of one of Europe’s most densely populated and highly urbanised regions. Ghent reached its demographic peak before the mid-fourteenth century, with an estimated population of 64,000 inhabitants. The Flemish city was not severely hit by the Black Death; nevertheless, its population had decreased to an estimated 45,000 inhabitants by 1500 (Stabel 1997, 31). Leiden profited from the take-off of Holland’s economy in the second half of the fourteenth century, growing from an estimated 4,000 inhabitants around 1350 to 14,000 inhabitants in 1498. The town’s population came under pressure in the early sixteenth century, due to stagnation in the cloth industry (Brand 1996, 29-30; Noordam 2001, 18-9). Drapery was the backbone of Ghent’s growth and prosperity, but the industry experienced major challenges in the late-medieval period due to changing patterns of demand and disruptions in the supply of wool. After the mid-fourteenth century, the grain staple enjoyed by the city on the Leie and Scheldt rivers became an increasing source of profit, in particular for the shippers (Nicholas 1987; Boone 1993). Overall, the urban economies were diversified, and comprised a wide array of manufacturing and trading activities for the home markets.

The need for townsmen to associate with one another to further their individual and common interests varied in time and place. The urban institutional infrastructure evolved in connection with the city’s economic functions and social structures. The occupational associations rose to prominence in Ghent in the early fourteenth century, after a new constitution granted to the city in 1302 gave the guilds influence on the election of aldermen. In the course of the fourteenth century, the dominant weavers’ guild and the fifty-three smaller craft guilds obtained the right to each appoint ten of the twenty-six aldermen, meaning that the Count and the members of the patriciate appointed the remaining six aldermen. Apart from a short interruption between 1453 and 1477, the guilds dominated the city council until 1540, when their privileges were revoked by the Emperor after a revolt (Boone 1990, 37-40, 47). In response to the political unrest in the Flemish and Brabantine cities, the burgeoning towns of Holland sought to prevent the guilds from gaining political influence. The Count banned all associations in Leiden in 1313, probably to quell the unrest among the drapery workers. However, occupational groups continued to exist, although it was only in the fifteenth century that the guilds became formally recognised by the Leiden city council. The thirty-five guilds recorded in the sources never obtained a formal say in political decision-making (Overvoorde 1914a; Marsilje 1991).

Table 1: Number of Guilds and Confraternities in Late-Medieval Ghent and Leiden

	Guilds	Confraternities
Ghent	58	40
Leiden	36	55

The spread of lay confraternities in the two cities followed a more or less similar pattern as that of the occupational guilds. In Ghent, the first religious brotherhood, which was not tied to a particular occupational group, dates back to the late-twelfth century, but most of the forty identified brotherhoods were founded in the fourteenth and fifteenth centuries (Trio 1993, 75-82). In Leiden, at least fifty-five brotherhoods were founded during the later medieval period, but references to these associations are scattered, making it unlikely that their existence was

long-lived in all cases (Van Luijk 1998, 27). The activities of the confraternities in Ghent and Leiden mainly concerned devotional matters. In comparison to other European regions, they provided little or no formal assistance to needy members or non-members. The well-developed charitable system in the Low Countries, organised at the parish level, may be an explanation for this exception (Trio 1994; Van Steensel 2012).

Medieval guilds and confraternities drew their membership predominantly from the urban middling groups. Guild membership was a condition for citizens to practice a particular trade or craft. In case of the confraternities, members sought to collectively achieve religious objectives that they could not provide individually. The urban poorer classes, however, most likely lacked the necessary means to join the corporations. Calculations on the proportion of the urban population that belonged to a corporation are difficult to obtain. It has been calculated that Ghent counted 14,267 masters and journeymen in 1356-1358, and an estimated 8,800-9,800 guildsmen in the third quarter of the sixteenth century. These numbers amount to 22-23 per cent of the total population of Ghent, and assuming an active working population of 48,5 per cent, this corresponded to 45 per cent of the labour force (Dambryne 2002, 38-44). These general numbers should not, however, conceal the fact that the differences in size between the corporations had an impact on their organisation and societal influence, as well as the degree of involvement of individual members.

#### GUILD AND CONFRATERNITY STATUTES

The counts and urban authorities monitored the guilds closely after they fought their way into Ghent's politic arena. No more occupational groups were formally recognised as guilds (*ambachten*) by the authorities after the political role of the corporations became constitutionally defined during the first half of the fourteenth century. The number of guilds remained fixed until 1540, when a new constitution was imposed upon the city. Some occupational groups responded to this situation by joining forces with existing guilds as (minor) members of an "umbrella guild", while at least sixteen other occupational groups remained as voluntary associations outside the formal corporate system (Dambryne 2002, 31-5). The corporate institutions in the late-medieval Low Countries were inseparably intertwined with the urban political system. As a consequence, the voluntary character of guilds and, to a lesser extent, confraternities was checked by the control exerted by the authorities over them (Prak 2006). This becomes clearly visible in the statutes of guilds and confraternities, which contained constitutional rules pertaining to the internal organisation of the corporations but also defined their relationship with the authorities.

The statutes of medieval corporations are often dismissed as being unimportant historical sources because of the normative character. Although it is acknowledged that the statutory codes provide valuable information about the formal structures of corporations and the official roles of members, the documents reveal little about the daily functioning of medieval guilds and confraternities. Moreover, voluntary associations could exist long before, or even without ever, adopting formal statutes. Finally, it is not certain that members readily knew the rules that were written down in the official statutes and ordinances (Black 1989, 79-83; Epstein 1991, 62-3, 82-91). The objections are valid. The foundation and replication of cooperative institutions in medieval Ghent and Leiden in no way depended on the existence of written records. Nevertheless, the guild and confraternity statutes are still a significant source for the study of the evolution and design of these institutions, as long as a strict distinction between unwritten and written rules, or informal and formal rules, is not presumed. In both cases, rules governed the behaviour of the individuals involved in voluntary associations.

There are only a few instances in which statutes were drawn up at the founding of a new guild or confraternity in medieval Ghent and Leiden. In general, the preserved documents were formulated by existing corporations to address particular issues or to amend existing regulations. The statutes were then drafted by the founders or, more often, the administrators of guilds and confraternities in consultation with other (notable) members. In the fifteenth century, it became common practice to register the statutes with the urban authorities, which approved and proclaimed the ordinances. The statutes were not externally imposed upon the guilds and confraternities, but the city council kept a close eye on the corporations; in particular, the internal regulation of the occupational guilds was scrutinised (Overvoorde 1914a, 346; Trio 1993, 95-9). The approval by the (urban) authorities of statutes or of changes to the rules became a prerequisite in the fifteenth century, but cases of interference are also documented for earlier periods. For example, the Count of Flanders refused a request by the fullers of Ghent to change their constitution in the late-fourteenth century. This may have been an exceptional case, though, as the fullers' guild had lost its privileges to participate in Ghent's urban government and to elect its leaders in 1361, after labour disputes between the fullers and the weaver-drapers (Munro 2002, 162). The autonomy of the occupational guilds and religious confraternities in Ghent and Leiden was curtailed by the authorities, but they maintained the right to organise themselves.

Table 2: Number of Preserved Statutes of Medieval Guilds and Confraternities<sup>1</sup>

	Ghent	Leiden
Guilds	54	13
Confraternities	16	3

Sources: Universiteitsbibliotheek Gent, Ms. 58; Trio 1989; Overvoorde 1914b; Posthumus 1911, 258-260; Van Luijk 1998.

With the exception of a few original copies that have been preserved in the archives of guilds and confraternities, the majority of the medieval statutes are found copied in the registers of the urban administration. Those dating back to the fifteenth and sixteenth centuries are all in the vernacular, meaning that all (literate) members could understand them. The earliest statute (1283/4) of the St Livinus fraternity, based upon the abbey of St Bavo, was written in Latin, but a translation into medieval Dutch made in 1437/8 has been preserved (Trio 1989).<sup>2</sup> Although the preserved statutes often resemble each other in structure and content, the precise wordings are too dissimilar to assume that they were literal copies of each other. However, given the general uniformity of the documents, it is likely that the guild and confraternity members, the notaries or municipal clerks who formulated statutes, used existing ones as examples (Trio 2004).

The preserved statutes of the guilds and confraternities in Ghent and Leiden (Table 2) have been analysed to identify the rules that shaped these corporations. It follows from the introductions to the statutes that (new) rules were often written down in response to a specific problem. The millers' guild in Leiden, for example, had its new statutes approved by the magistracy in 1485, after contention arose between guild members about an earlier notarial agreement made between them (Overvoorde 1914b, 545-6). More generally, the formalisation

<sup>1</sup> The analysis of the collected sources is part of a research project that commenced recently. This paper is based on a first examination of a limited number of statutes. An extensive analysis of the dataset – to which additional case studies from Italy and England will be added – should follow in the near future.

<sup>2</sup> It was not uncommon that translations of Latin texts were made. For instance, the statute (1310) of the Florentine guild of the oil vendors and grocers stipulated that a translation was to be made in Italian, so that all members would understand the rules (Morandini 1961, 161).

of rules and their approbation by the authorities became beneficial for the corporations as they acquired properties and grew in size. As recognised legal entities, it was easier for guilds and confraternities to manage the properties and assets acquired through membership fees and bequests. And in cases of internal conflicts or litigation with external parties, they could more easily appeal to the city council to intervene. The occupational guilds were particularly dependent on the urban authorities to establish effective monopolies for their trades and crafts. This was, in some cases, exemplified by the fact that fines levied by the guilds were partly transferred to the magistracy. All in all, the loss of autonomy of the corporations was a two-way process, catalysed by the pressure from the city council and the needs of the guild and confraternities.

The regulations laid down in the statutes of the guilds and confraternities in late-medieval Ghent and Leiden can be distinguished by the four types of rules, governing administration, membership, duties and activities. The identified rules can be understood as instructions, and meet Ostrom's criteria for regulatory rules (Ostrom 2009, 137-140). The statutes of the guilds and confraternities shed less light on the norms and strategies that emerged out of the daily interaction between guild members.

The first cluster of rules pertaining to the administration of corporations stipulate the number of governors (deacons or provisors) and subaltern personnel, the way in which they were to be elected or appointed, and their official powers and tasks. The second set of rules specifies who were qualified to join the corporations and what conditions new members had to fulfil. In the case of the occupational guilds, membership was a precondition for practising one's trade or craft and, moreover, only citizens of the city were admitted as members. Additional rules were devised for the entrance of journeymen, and the membership of widows of deceased guild masters. The majority of the confraternities were open to all men and women, who were required to pay an entrance fee. Some confraternities, however, were more exclusive and selected new members according to criteria of gender, profession or social status. The confraternity of St Barbara in Ghent was exclusive in the sense that its membership was limited to fifteen males and fifteen females (Trio 1993, 163), while the pilgrimage confraternities were only open to those who had completed a pilgrimage. The third cluster of rules concerned the core activities of the corporations, and can be distinguished by rules that prescribed the economic, religious and social duties and privileges of members. These types of rules defined the very core of the cooperation between the guild and confraternity members, and as a consequence also stipulated how compliance to the rules would be monitored and how violations would be punished. The penalties generally took the form of a fine, to be paid to the governors of the corporation. Finally, the fourth set of rules related to rather diverse activities aimed at fostering the internal cohesion and common identity among the members. All corporations held annual feasts for conviviality on their patron's feast day, and some statutes also contained instructions about the participation of the guild or confraternity in religious or civic festivities.

It follows from the analysis of the institutional statements that the corporations in medieval Ghent and Leiden had much in common in their design, even though the elaboration of the rules varied, especially when the statutes became more extensive in the sixteenth century. For now, the analysed statutes do not provide enough data to establish to what extent the rules that governed the medieval corporations evolved over time, but it can be assumed that the documentation and expansion of the regulation that encoded the behaviour and expectations of members had an impact on the selection of rules that made up these institutions.

## EVOLUTION AND DESIGN OF MEDIEVAL CORPORATIONS

Can evolutionary theory give a proper and persuasive explanation of the design and evolution of medieval corporations? In order to answer this question, it should first be clarified what is meant by an evolutionary explanation. The view that Darwinian principles of variation, inheritance and selection can be extended outside the biological sphere has become more widely accepted nowadays. The major misunderstanding that evolutionary theory comes down to biological reductionism has been cleared up, and the body of supporting theoretical and empirical knowledge in the field is steadily growing. Still, there is little consensus among social scientists on how evolutionary theory can be generalised. There are well-known, but not often applied, examples of two- or three-tiered evolutionary theories (Richerson and Boyd 2005; Runciman 2009). The most promising approach, however, does not stick to a distinction between genetic and socio-cultural evolution; rather, it claims that the generalised Darwinian principles can explain the evolution of any dynamic population of entities that compete for scarce resources, including language, customs and social institutions (Hodgson and Knudsen 2010).

In a nutshell, evolutionary theory claims that the evolution of complex systems of replicating entities is subject to the core principles of variation, selection and inheritance. The evolutionary process is understood as a general and substrate-neutral algorithm, a set of instructions that is repeated mechanically to solve a problem. Adaptive solutions to problems are differentially selected and passed on to successive generations of entities. Adaptation and fitness are relative both in terms of context and the constraints imposed by the history and design of an entity; in other words, evolution is always path-dependent. It is important to keep in mind that “[t]here is no process of adaptation as such: adaptations are by-products of the interaction of variation, selection and retention mechanisms. Evolution does not have the teleological goal of producing adaptations” (Stoelhorst 2008, 419). From a methodological point of view, an evolutionary explanation traces back the causal sequence of variation and selective retention that produced a particular outcome. Likewise, it has to be explained why certain variations turn out to be dead ends in a dynamic environment with changing selective pressures. In history, the causal links between selection and evolutionary outcomes may to a certain extent be determined with the benefit of hindsight, as long as the possibility of exaptation and maladaptation is not ruled out. All in all, evolutionary theorists stress that selectionism “is a general metatheoretical framework rather than a complete context-specific theory” (Hodgson and Knudsen 2010, 45, 234). Because of their generality, evolutionary explanations necessarily draw on auxiliary theories at lower levels of abstraction.

The evolution of institutions differs from genetic evolution in the sense that it involves other mechanisms and principles. Therefore, the first major question that follows from the analogy is what the units of selection are in socio-cultural evolution and, in this particular case, the evolution of institutions. If institutions are understood as complex social rule-systems (North 1994, 4-5), then “[r]ules can be thought of as the set of instructions for creating an action situation in a particular environment. In some ways, rules have an analogous role to that of genes. Genes combine to build a phenotype. Rules combine to build the structure of an action situation” (Ostrom 2009, 17, 30). In other words, in the case of the evolutions of institutions, rules (i.e. norms, conventions or legal rules) are to be understood as the units of selection or replicators, while the institutions, as interactors, are their phenotypic embodiment. Replicators are defined as the “entities” that pass on their informative structures essentially intact in successive replications, while interactors are defined as entities that interact as a cohesive whole with their environment in such a way that this interaction causes replication to be differential (Hodgson and Knudsen 2010, 42, 76-9, 165-73, 231).



If the rules that shaped medieval guilds and confraternities are seen as replicators and the corporations as interactors, the next step would be to consider the mechanisms of variation, selection and inheritance that explain the evolution of these institutions. Variations in institutional design may be random – variations occur stochastically within any replicative process – or purposive in origin. In the case of the guilds and confraternities, variation could happen as rules were written down, applied to new situations, or revised to find solutions for certain problems. The implementation of new rules happened in a diversity of ways, as guild and confraternity members had to deal with local contingencies. For this reason, the outcomes of innovations were sometimes rather different from those envisaged: in fact, it was a matter of experimentation. Thus, the environment in which the corporations acted, selected the rules with fitness advantage, so that they were reproduced and institutional change could take place. The selective pressures operating on rules that shaped guilds and confraternities can be identified more precisely, such as changes in economic conditions, interference by urban authorities, and competition from other institutions. Finally, it is essential to every evolutionary process that the information concerning adaptations is passed on in time. In other words, for adaptations of rules to be successfully replicated, the changes in the behaviour of guild and confraternity members had to be encoded in new rules, and copied. Although not dependent on written rules, the transmission of these rules was enhanced significantly by writing them down, as writing provides a more effective means of storing and replicating information (Ostrom 2009, 27, 126; Hodgson and Knudsen 2010, 198). Guilds and confraternities evolved as social rule-systems, so long as changes in the behaviour of the members fed back into the rules in which their collective behaviour was encoded.

A matter of debate concerns on which level selection takes place. In the case of the medieval corporations, there was, in the first place, a selection *of* guilds and confraternities (as interactors) and a selection *for* rules that shaped these corporations (as replicators). Selection operates on the interactor, and only indirectly on the replicator. But, as rules only exist as far as they are replicated, the fitness and copying of the rules that shaped medieval corporations were determined by the replicative success of the guilds and confraternities in confrontation with their environment. However, from a dual-inheritance perspective, the medieval corporations stabilised competition within groups, and as such their selection benefitted the group members (and their genes as replicators). Finally, according to multi-level selection theory, the guilds and confraternities could also be regarded as replicators or units of selection in a competition between groups. From this perspective, there was also a selection *for* corporations (instead of rules) which was determined by the selection *of* groups. This understanding of group selection and definition of replicators, however, is not really compelling, as long as it does not account for the mechanisms and structures that make groups and institutions a sustainable and coherent unit. A more convincing approach to group selection is developed by Hodgson and Knudsen, who allow the possibility that groups and institutions qualify as interactors,<sup>3</sup> as long as they are clearly demarcated and cohesive, and that the replicators (genes and rules) that inhibit them are properly identified (Hodgson and Knudsen 2010, 151-173).

The design of institutions is explained by their origins. The rules that governed guilds and confraternities were the product of repeated cycles of variation and selective retention; they were copied and adapted to new environments. Consequently, the adaptations that emerged out of this process can hardly be regarded as purposefully thought out. Evolutionary theorists

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<sup>3</sup> Ostrom's design principles, which characterise robust institutions for collective action, may be a helpful starting point for identifying these groups and institutions (Ostrom 2009, 259).

are not the first to emphasise this, as it is commonly accepted that institutions have no single, intentional designer. First of all, institutions are sometimes an emergent property of social interaction between individuals with possibly conflicting interests. Moreover, institutions are often too complex to be optimised by one-step design. Experimentation and tinkering are inevitable because rules have unintended consequences and earlier choices may limit the possibilities of institutional change. Thirdly, institutions do not emerge or evolve in a vacuum, but function in an intricate and changing environment that shapes their evolution: “rule dynamics can create self-reinforcing mechanisms and path dependencies, making it extremely difficult for actors involved to engage in collective-action processes that can move them away from non-optimal rule configurations and into more desirable rule systems” (Popper 1957, 59-61; Goodin 1998, 27-34; Schubert and Von Wangenheim 2006; Ostrom and Barsuto 2011, 335). Thus, a conception of institutional evolution as embodying a progress towards better, let alone optimal, outcomes is ungrounded. Furthermore, from an evolutionary perspective, the design of institutions can only be explained casually, meaning that the role of human agency (as input into the open and unpredictable process of variation and selective retention) also requires a causal explanation.

## CONCLUSIONS

The main challenge for social scientists, according to Ostrom, is “to identify the working parts, the grammar, the alphabet of the phenotype of human social behavior” (Ostrom 2009, 30). In this paper, it has been cursorily explored to what extent the evolutionary mechanisms of variation and selective retention provide useful tools for identifying and explaining institutional change. Taking an selectionist approach, the preliminary analysis of the statutes of occupational guilds and religious confraternities in late-medieval Ghent and Leiden indicates that these are valuable sources for uncovering the rules or design features (and their transmission) that shaped the institutions for collective action. However, the data are less useful for reconstructing the evolution of the rules embodied in these institutions. Nevertheless, the question whether medieval corporations were designed can be answered affirmatively, as long as their design is understood to have been resulted from iterative steps of variation and adaptation of rules, followed by the selection of the best-fit alternatives.

As stated earlier, generalised evolutionary theory only provides a general framework for the study of human behaviour and socio-cultural evolution. Consequently, the explanatory efficacy of this approach may not be convincing at first sight; but evolutionary theory, which is truly interdisciplinary in nature, does not replace other explanatory theories, nor makes detailed empirical analysis redundant. Most importantly, it is to the credit of evolutionary theory that the study of institutions can move on from a rational-actor model to an approach that incorporates the multi-actor context in which institutions evolve through a process of experimentation and selection.

*Preliminary draft: please do not cite or circulate.*

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