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1. Introduction

Since the 1990s, the concept of social capital\(^2\) has gathered increasing attention in the literature about common pool resource (CPR) management and collective action, especially in relation to sustainable use of natural resources and wise use of environmental goods. Social capital is often defined as ‘features of social organisation such as networks, norms and trust that facilitate coordination and co-operation for mutual benefit’ (Putnam 1993:35-36). Often, the concept of social capital is brought in as an incentive mechanism or institutional arrangement to curb individuals’ incentive to free-ride regarding the provision of public goods (Ostrom 2000; Aoki 2001b). It is also generally argued that the existence of networks among the agents and the dense flow of information among the agents lower the transaction costs of creating collective action (Putnam 1993; Ostrom 2000; Pretty and Ward 2001; Collier 2002; Paavola and Adger 2005).

However, these institutionalist arguments have also been criticized due to their incapacity to explain why social capital has this intrinsic ability to curb such perverse incentives and lower transaction costs (Harris 2001; Cleaver 2003; Mosse 2006). Critics argue that the institutional angle cannot explain why some communities succeed in creating collective action while others fail to do so despite the existence of the networks and dense flows of information. As governments and markets fail, communities can also fail (Bowles and Gintis 2002; Bulte and Engels 2007). The relationship between social capital and environmental outcomes and governance through collective action is far from clear (Lehtonen 2004). According to these critics, the social capital theories have left social capital as a black box and do not explain how collective action toward CPR management is created (Ray and Bijarnia 2007).

This paper aims to address theoretically the way social capital may help to foster collective action making use of the concepts of common knowledge as defined by Chwe (1999) and symbolic power, sensu by Bourdieu (1990). By bringing these two concepts together, we argue that the creation of collective action is not just the result of rational calculation about how much to invest in collective action by individuals but also a result of power relation. We argue that the current argument on social capital depoliticizes the very political nature of the social capital functioning as an ‘anti-politics’ machine (Ferguson 1994; Harris 2001).

The paper is structured as follows: In the next section we provide a succinct description of the

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\(^2\) This paper does not argue whether social capital should be termed as ‘capital’ or not. Solow (1999) and Arrow (1999) argue that social capital is a by-product rather than deliberate investment, thus it does not qualify to be termed as capital. We agree with McNeill’s (2007) recent proposition that the concept should be termed sociality rather than social capital. However, considering the popularity of the concept and the fact that it is one of the fields where interdisciplinary conversation is taking place, the paper uses the latter term.
roadmap linking social capital and collective action using a simple conceptual model. Section 3 brings in the concept of ‘social embeddedness’ which gave birth to the original theory about social capital and we briefly address the question of how CPR which needs some form of collective action and social capital is linked by the new institutional economics school. By doing so we point out that standard social capital theories suffer from both ‘over-socialized’ and ‘under-socialized’ models of human agency. Then we argue in section 4 that incentive mechanisms for CPR management crafted by social capital cannot fully explain the existence of collective action. Rather, we argue that what is needed is a focus on the ability of social capital to create common knowledge as the first critical node. Also, we point out that the creation of common knowledge involves symbolic power. Thus the potential for creating collective action cannot be considered just as the result of pure rational calculation by individual members of a community. Rather we argue that creation of collective action is a result of power relations inherent in the social structure. This discussion leads us to explore how common knowledge can be diffused as community members and also how common knowledge may be challenged by some marginalized groups within the community leading to failure in fostering collective action (Section 5). The last section concludes by addressing the implication to environmental policy, more specifically Payment of Environmental Service (PES).

2. A roadmap from social capital to collective action: the critical nodes

To understand the relationship between social capital and the collective action required for common pool resource management, the paper argues from a sociological and institutional perspective. We argue that social capital can positively contribute to (i) the creation of ‘common knowledge’, identified with the link \( L_1 \) in Figure 1, and how (ii) through sharing such common knowledge among community members, (link \( L_3 \)) it may successfully lead to collective action in order to solve collective-type environmental governance problems \( (L_4) \). In so doing, the paper addresses the often neglected negative pathway between investment in social capital and the breakdown or impossibility of fostering collective action. This pathway is shown in Figure 1 through links \( L_1 - L_5 - L_6 \). In addition such pathways are shown to be mediated by symbolic power \( (L_2) \) in communities affected by collective environmental problems.
It is becoming clearer even among ‘super-rational’ game theorists that individual agents do not always act according to their own preferences but that they take into account other agents’ preferences and the effects of their actions, thus acknowledging the issue of interdependency (Gachter and Fehr 1999). We call such understanding of the preferences of the others as a common knowledge following the work by Chwe (1999; 2001). In this vein, the creation of common knowledge should not be understood as a simple process of averaging out the preferences of all other members of society and providing the optimal amount of collective action according to a rational calculation. Rather it is a process of imposing certain arbitral forms of preferences, often that of one of the dominant groups in society. This is due to the fact that human agents are not capable of comprehending all such different preferences and some kind of typification or representation (‘symbolic formula’) is then made necessary (Berger and Luckmann 1966; Douglas 1986). To this end, we depart from the traditional view of collective action as the result of rational calculation regarding the optimal amount of individuals’ provision of resources towards a given public good, but we stress the political process which involves domination and subordination of different groups in society that can lead to fostering collective action (Cleaver 2003; Mosse 2006).

It is not enough just to create common knowledge. This has to be diffused and shared among

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3 Here the dominant/marginalized group does not necessarily mean a dominance/subordinance in terms of demographic weight, rather it has a political/social connotation linked to the idea of power.
the members of the community (L₃). When this commonly shared preference towards the public good effectively becomes common knowledge, agents are induced, in some cases forced, to act collectively due to the power relation that the CPR institutions are embedded into. This is especially true for those from the marginalized groups whose real preferences may not necessarily coincide with that of common knowledge. However, the presence of different preferences opens up the possibility of challenges (L₅), leading to the potential of failure in creating the needed collective action institution (L₆).

The latter argument about the possibility of some marginalized groups challenging common knowledge is important and is often overlooked despite the fact that the history of CPR management is full of resistance and struggles (Bardhan and Ray 2008). We argue that the divergence between the sharing and challenging of common knowledge occurs due to the different types of social capital existing in the community, normally known as ‘bonding’ social capital and ‘bridging’ social capital (Granovetter 1973; Putnam 2000; Woolcock and Narayan 2000; Adger 2003). There is a strong need to assess how the social capital is distributed along the society or the community and its functions. This ensures us a well-balanced policy in seeking both the environmental goals such as creating collective action for CPR management and the poverty alleviation goals such as enhancing the capacities or the agencies of the marginalized groups.

Table 1 summarizes the concepts used in the paper which form the building blocks of our argument connecting social capital and collective action in order to better understand the existing challenges in environmental public good governance.

Table 1. Summary of concepts used in this paper

<table>
<thead>
<tr>
<th>Concepts</th>
<th>Definition</th>
<th>Seminal literature</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Symbolic formula</strong></td>
<td>Frame of reference that provide agents with understanding of the world</td>
<td>Douglas (1986)</td>
</tr>
<tr>
<td><strong>Common knowledge</strong></td>
<td>Symbolic formula that represents the generalised preference of the others</td>
<td>Chwe (1999; 2001)</td>
</tr>
<tr>
<td><strong>Symbolic power</strong></td>
<td>Power that legitimize the certain ‘symbolic formula’ as common knowledge</td>
<td>Bourdieu (1990)</td>
</tr>
<tr>
<td><strong>Internalization</strong></td>
<td>A long-term process of consolidating and embedding one’s own beliefs, attitudes, and values, when it comes to moral behaviour</td>
<td>Berger and Luckman (1966)</td>
</tr>
<tr>
<td>‘Bridging’ social capital</td>
<td>Weak ties that bridges difference inside the community</td>
<td>Granovetter (1973)</td>
</tr>
<tr>
<td>‘Bonding’ social capital</td>
<td>Strong ties that serves the interest of certain group of the community</td>
<td>Granovetter (1973)</td>
</tr>
</tbody>
</table>
3. Revisiting the link between social capital and institutions

3.1. Social capital and social embeddedness

In the 1960s, social scientists started to recognize that the social structure, such as social networks and interpersonal relations, which were later epitomized as social capital, greatly influences various economic and political outcomes. Granovetter’s (1973; 1985) seminal work and his concept, ‘social embeddedness’ had a strong impact in this regard. To take into account the influence of social structure in the economic activity, he argued that “the behaviour and institutions to be analysed are constrained by ongoing social relations that to construe them as independent is a grievous misunderstanding” (Granovetter 1985:481-2).

Influenced by Granovetter and other economic sociologists, some institutional economists have conceptualized economic activity as an institutional process (Williamson 1981; North 1990). Ecological economics has also recognized the ‘embeddedness’ of the economic system not only within the broader ecological but also within social systems (Spash and Villena 1998; Paavola and Adger 2005; Røpke 2005). To encounter this embeddedness in the social structure and the relationship between the social structure and environmental outcomes, the idea of social capital has been explored especially in the CPR management literature (Ostrom 1990; Aoki 2001b; Lehtonen 2004). But what was the implication of Granovetter’s proposition in relation to the coined concept of social embeddedness? In his work, Granovetter takes into account two sister disciplines in social science, namely sociology and economics.

He juxtaposes, on one hand mainstream utilitarian economics with its tenets of the almost robotic human agency as welfare maximizers with stable preferences and its main rational approach to the exchange of goods and services and on the other, sociology that tends to regard human agents as constructed by a social structure through the internalization of symbolic systems, social norms, and customs. Granovetter regards the utilitarian economic model as ‘under-socialized’ and the sociological one as being ‘over-socialized’. However, he recognized that both disciplines share a key common trait in that they see human agents as atomized actors. Granovetter (1985) eloquently clarifies this point by stating that “fruitful analysis of human action requires us to avoid automation implicit in the theoretical extremes of under- and over-socialised conception. Actors do not behave or decide as atoms outside social context, nor do they adhere slavery to a script written from them by the particular intersection of social categories that they happen to occur. Their attempts at purposive action are instead embedded in concrete, ongoing system of social relations” (ibid: 487).
It is through the concept of social embeddedness, that Granovetter attempts to avoid both an ‘over-socialized’ approach of generalized morality and the ‘under-socialized’ one of impersonal, institutional arrangements and, thus, tries to find some space for human agency, i.e. human free choice of actions. Despite current theories of social capital, especially after Putnam (1993), being said to follow Granovetter, most of them still keep on falling into the pit-fall of either the ‘under-socialized’ or ‘over-socialized’ model by reducing social capital to a mere institutional arrangement or an incentive mechanism.

3.2. Social capital and new institutional economics

Since Hardin’s (1968) views on the tragedy of the commons, the possibility for collectively managing CPR has been analysed extensively and more recently by adding game theoretic versions and feeding it with a social capital dimension (Ostrom 1990). The motivation mainly comes from the assumption that focusing attention only on the dominant free-rider behaviour leaves no place for a cooperative rule unless it is imposed and enforced by outside power. However, empirical evidence has demonstrated that coordination norms do exist inside communities that may reinforce the expectation of collective behaviour leading a critical mass of individuals to adopt solutions based on cooperative strategies (Ostrom 1990; Runge 1992).

In addition, the institutionalist view has championed the interdependency argument. They argue that any dominant strategy would take into account the expectation of others’ behaviours, and change their own behaviours accordingly. In this sense, decision-making regarding the use of CPRs involves interdependent choices in which not only the individual benefit and the cost of using the resource becomes a function of the total action of the group, but the decision to use (or overuse) the resource is affected by the expected decisions of others (Paavola and Adger 2005).

The concept of social capital has also been introduced to explain how communities are able to impose certain coordination norms without relying on external coercive regulation. But how did the notion of social capital come to play a role in the CPR debate? Here we briefly review the history of the origin and emergence of the social capital concept, prior to becoming popular after Putnam’s (1993) contribution and the economic literature that has followed since, also in ecological economics (e.g. Lehtonen 2004; Rodriguez and Pascual 2004). This will help to understand its location within the expanding CPR literature and by extension in ecological economics.
3.3. From the origin of social capital to its application by institutionalists

It was not until Pierre Bourdieu’s (1986) seminal work that the concept of social capital started to gain particular attention (Portes 1998). Bourdieu (1986) defined it as an “aggregate of the actual or potential resources which are linked to the possession of the durable network of more or less institutionalised relationship of mutual acquaintance and recognition – or in other words, to in a group – which provides each of its members with backing of the collectively-owned capital, a ‘credential’ which entitles them to credit, in various senses of the world” (ibid: 248). Clearly, Bourdieu’s position is that social capital transforms the contingent relationships into durable obligations subjectively felt, e.g., feelings of gratitude, respect, friendship, etc., or institutionally guaranteed, i.e., rights. According to him “this production/reproduction of social capital is done through the alchemy of consecration, the symbolic constitution produced by social institution and endlessly reproduced in and through exchange (of gift, words, women, etc) which it encourages and which…produces mutual knowledge and recognition. Exchange transforms the things exchanged into sign of recognition and through mutual recognition and the recognition of the group membership which it implies, re-produces the group” (ibid: 250).

It follows that for Bourdieu, social capital functions as a mechanism to impose coordination norms, understood as durable obligations, because it produces mutual knowledge and recognition. In Chwe’s (1999) terms this is known as ‘common knowledge’. However, Bourdieu’s contribution has been mostly ignored especially by those who follow the rational choice model and thus a more game theoretical approach (Harris 2001; Morotomi 2003). We align with the argument that this has resulted in the ‘mystification’ of the functions of social capital and its de-politicization (Fine 1999; Harris 2001).

Influenced by Granovetter, Coleman (1988) was the first rational choice theorist to use the concept of social capital and maintains the assumption of agents’ rational action but superimposes a social and institutional structure on them. In order to explain the effect of this social/institutional structure, he introduces the concept of social capital: “social capital is defined by function. It is not a single entity, but a variety of different entities that have two characteristics in common: they all consist of some aspect of social structure, and they facilitate certain actions of the actor within the structure” (ibid:S.98).

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4 This is partially due to the following three facts: (i) Bourdieu’s main focus is on cultural capital which he argues extensively in relation to his key concepts, ‘habitus’ and ‘fields’, rather than social capital (Bourdieu 1984), (ii) Bourdieu’s concept of capital is rather chaotic (Fine 2001), and (iii) Bourdieu does not make a clear argument on the relation between social capital, cultural capital and symbolic capital and at one point these three concepts become undistinguishable (Swartz 1997).
For Coleman (1988), social capital is a public good that is recreated as a by-product of other activities. But it was Putnam’s (1993) influential work that popularized the notion of social capital extensively. For him, social capital refers to those “features of social organisation, such as trust, norms, and networks that can improve the efficiency of society by facilitating coordinated action” (Putnam 1993:167). However, later Putnam (2000) in an unexpected turn refers to social capital as the object to be fostered by public policy rather than the logical framework to explain institutional performance (Morotomi 2003). It is this new conceptualization of social capital that has made his argument most popular among policymakers and contributed to the proliferation of the concept. Since then social capital has become detached from a social structure that can be crafted and manipulated by agents to obtain favourable economic and political outcomes.

This trend has been further enhanced by the CPR management literature most notably by Ostrom (2000) for whom the concept of social capital mainly works as coordination norms and it is introduced to explain the existence of collective action inside the community. Hence, social capital is understood as “shared knowledge, understanding, norms, rules and expectation about the pattern of interaction that a group of individuals bring to recurrent activity” (Ostrom 2000:176) and furthermore as “an attribute of individual and of their relationship that enhance their ability to solve collective-action problem” (Ostrom and Ahn 2002:xiv). Ostrom’s view goes further to argue that “to create social capital in a self-conscious manner, individuals must spend time and energy working with one another to craft institutions – that is set of rules that will be used to allocate the benefit derived from an organised activity and to assign responsibility for paying the cost” (Ostrom 2000:178 emphasis added). Here, Ostrom critically argues that human agents have the power to craft social capital to provide the optimal amount of collective action according to their rational calculation.

Another important strand of the institutionalist version of social capital puts more emphasis on social capital in relation to lowering transaction cost (Katz 2000; Pretty and Ward 2001; Paavola and Adger 2005). For example, Pretty and Ward (2001) define social capital as “the structure of relations between actors and among actors” that encourages productive activities. These aspects of social structure are called social capital because they act as a resource for individuals to use to realize the interest of others as well as their own. Local institutions are effective because “they permit to carry on our daily life with minimum repetition and costly negotiations” (ibid:211, emphasis added.). In this vein it is commonly assumed that social capital is also useful, as it lowers the transaction cost of acting collectively and thus facilitates cooperation among the community members. The implicit argument is that social capital, by helping to lower transaction costs in achieving collective action, is necessary for reaching an
optimal outcome for the community.

3.4. Under- and over-socialized human agency

Social capital theories after Bourdieu, especially those stemming from game theoretical approaches, treat social capital as a resource that agents utilize to circumvent incentives to free-ride and to lower the transaction cost for collective action. It is assumed that individual agents are able to rationally calculate the cost and benefit of collective action and self-consciously invest in social capital. However, it does not explain why social capital has that ability to circumvent the incentive to free-ride (Cleaver 2000; 2003) or why indeed it can lower transaction cost (Lehtonen 2004). Why do agents feel more obliged to comply with ‘coordination norms’ when there are interpersonal networks or dense information flow?

Game theorists, such as Ostrom and Aoki, reduce the social capital into institutional arrangements. By doing so, social capital becomes a variable independent of social structure that explains the existence of collective action (Cleaver 2000; 2003). As a result, it cannot explain how the common understanding of the game is formed and shared in the community. We argue that it is not only the realization of individual cost and benefit that allows agents to act collectively but the understanding of the preferences of other community members which also matters. Game theorists who ignore the influence of interdependency of the decision made by agents thus holding onto the under-socialized model of human agents with stable preferences who are assumed to take their decisions as in an isolated situation assume that social capital can be created to obtain favourable economic or political outcomes. In other words, these theorists ignore the social structure and its coercive character. Thus, social capital becomes a tool in the hands of individual agents who craft it according to their rational calculations of the effectiveness of collective action without an explicit account of agents’ relationship to their social structure (Mosse 1997; Cleaver 2003; Mosse 2006).

At the same time, paradoxically, game theory when applied to problems such as CPR management also tends to suffer from an over-socialized model of human agency. This is because it is often assumed that once self-enforcing incentive mechanisms are built, agents would automatically follow the commonly agreed rules/norms and reach the optimal solution (Hodgson 1997). However, empirical evidence also shows that CPR management is full of resistance and struggles and long negotiations (high transaction costs) despite the existence of networks and a dense flow of information (Cleaver 2000). For instance, while the major policy trend for CPR management is turning toward co-management between the community and the state (Bulte and Engels 2007), the game theoretic understanding of social capital cannot explain such community failures because these assumptions suffer from over-
socialized models of human agency. In other words, in these theories there is no room for human agency to play a part, or room for human agents to interpret, misinterpret and sometimes to challenge these institutional arrangements.

By reducing the notion of social capital to institutional arrangement, social capital loses its explanatory power. Social capital should be considered as something that mediates institutions and agents rather than part of the institutional arrangement per se (Paavola and Adger 2005). However, if social capital were to explain collective action, it would not be sufficient to interpret social capital as the density of the networks and rate of these information flows. We side with Cleaver’s (2000) position that the existence of networks and information flow do not necessarily lower the transaction cost or guarantee that agents will comply to the institutions. Instead, we need to explain what networks and information flows do and how they lower the transaction cost or incentivize actors to follow the institutions.

4. Creation of common knowledge: the first node between social capital and collective action

4.1. Common knowledge as the generalized preference of the community: Node L₁

In the previous section we have argued that current social capital theory does not sufficiently explain the creation and potential direction of collective action. To regain the explanatory power of social capital, we argue that two key concepts have to be introduced: common knowledge and symbolic power. We have argued that community members may tend to act collectively only when they can formulate common knowledge that carries with it the idea that acting collectively creates benefits that outweigh the costs of such effort. But common knowledge may leave some marginalized groups within the community not being able to represent their preferences towards collective action, thus opening the possibility of challenging the articulation of the community’s preferences by the more powerful groups who succeed in imposing such common knowledge. The formulation of this common knowledge and its sharing among the community members depend on the symbolic power inherent in the community. Further, in the case of CPR management, taking other agents’ preferences into consideration is especially important as the decisions of heterogeneous interests by community members are all interdependent (Vatn 2005). While it is often assumed that in such cases social capital plays an important role in reducing transaction costs in fostering collective action, we argue that if social capital is to be instrumental in this sense, it can only be through the creation of common knowledge and its sharing and existence of symbolic power.
Chwe (1999) argues that agents are strategically rational implying that they make decisions knowing that others are also rational, in which case social structure and rationality are not mutually exclusive but rather compatible. However we argue that considering the preferences of others in a rational way, as neoclassical economics and its game theoretical strand do, has its problems. Even in small communities where CPR is at stake, the preferences of individual members are often highly heterogeneous and vary according to their gender, caste, ethnicity, etc. Agents with different social positions have different preference structures (Leach, Mearns et al. 1999; Agrawal and Gibson 2001). Given our cognitive limitations, it is not possible to deal with all such different preferences in a mechanistically rational way (Hodgson 2000). To avoid this overload, as human agents we economize our cognitive capacity by relying on what Douglas (1986) calls ‘symbolic formulae’\(^5\). In other words, we need to *socially construct* a ‘symbolic formula’ as common knowledge that shows that ‘our’ benefit (benefit for the community as a whole) of collective action exceeds ‘our’ incurred cost (cost as a community) from engaging in collective action.

Here, we go beyond the argument of bounded rationality and embrace the notion that common knowledge needs to be socially constructed as similarly pointed out by Berger and Luckman (1966) and Bourdieu (1992). Social construction means that agents interacting together form, over time, typifications or ‘symbolic formula’ of each others’ preferences, and that these typifications eventually become habitualized into reciprocal roles played by the actors in relation to each other (Berger and Luckmann 1966). It is important to note that this process of social construction is neither a process of averaging out the existing preferences in the community nor a purely rational calculation, as often modelled in game theoretical approaches. Rather, it is a process of political struggle over who has the legitimacy to *represent* themselves leading to common knowledge. Collective action is formed upon such common knowledge. The relationship (often termed as social capital in CPR management) that may arise between dominant and marginalized groups, each with their symbolic formulae of each others’ preferences, would form the necessary ingredients to understand to what extent it is possible to create collective action for CPR management or how sustainable such social capital may be. Let us turn to the way symbolic power creates common knowledge (link L\(_2\) in Figure 1).

**4.2. Symbolic power for common knowledge: Node L\(_2\)**

The question we want to bring into our argument is, whose calculation of benefit and cost should be represented as common knowledge out of the manifold preferences existing in a heterogeneous community? We have argued that the answer should focus on those who have

\(^5\) This concept is very similar to Veblenian’s notion of ‘habit of thought’ (Hodgson 1997; 2000).
the symbolic power to impose a legitimate vision of the social world and of its divisions (Bourdieu 1990; Swartz 1997). This is where the notion of symbolic power comes in, defined as ‘world-making power’ by Bourdieu (1990). Due to the hierarchical relationships inside the community, certain preferences, often that of the dominant group, gain acknowledgement as public nature and present themselves as common knowledge of the whole community. There is no guarantee that this preference, which obtains a common character, will achieve the level of collective action necessary for the desired ecological outcome. In this sense, the preference that becomes common knowledge is arbitral in its nature. The symbolic power possessed by the dominant group legitimizes their arbitral preference as common knowledge, making other preferences ‘unthinkable’ (Bourdieu 1971).

Thus, the symbolic power is fundamental to create common knowledge. The symbolic power allows the arbitral preference of the dominant group in the community to be represented as common knowledge due to the advantageous position held by the dominant group inside the social structure (Bourdieu 1990). By disguising as ‘common’, the preference structure and ordering of the dominant group override other preference orderings as ‘illegitimate’. It is this power to impose common knowledge that ultimately enables social capital to reduce the transaction cost that entails the creation of collective action. Especially when there are heterogeneous sets of preferences within the community, associated with groups that are hierarchically related, the symbolic power plays a vital role in reducing the transaction cost. This implies that the existence of the network and information flow does not on its own guarantee the reduction of such transaction costs. Rather, networks and information flows become instrumental and enable the dominant group to spread their vision of the costs and benefits associated with collective action as common knowledge.

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6 In a similar way, Habermas (1986) argues “the fundamental phenomenon of power is not the instrumentalization of another’s will, but the formulation of a common will in a communication directed to reach agreement” (ibid:76, emphasis added).
Box 1: Social capital does not lower the transaction cost

Institutionalists’ view of social capital suggests that the presence of social capital reduces transaction cost for collective action and social capital mediate institution and collective action (Pretty and Ward 2001; Paavola and Adger 2005). According to their argument, the transaction cost is lowered because social capital is instrumental to detecting ‘free-riders’ or reaching an agreement on collective action by making individuals in the community more ‘trustworthy’. However, some case studies show that high social capital may not be conducive to collective action, but rather result in the inability of the community to punish the ‘free-riders’. For example, Yami et al.’s (2012) case study in Ethiopia shows that the community resulted in high negligence of rule-breaking despite multiple social capital created by multiple informal institutions such as burial institutions and rotational savings. Another finding by Cleaver (2000) from her case study in Zimbabwe shows that the transaction cost of reaching collective action was rather high because meetings were lengthy, and decisions were only made on the achievement of consensus, after hearing all who wished to speak. Moreover, Mosse (2006) argues that collective action around tank irrigation in India is not dependent upon trust generated through social capital but is founded upon relations of caste power, graded authority, personal patronage, and the redistribution of resources (as bribes and payoffs). These cases which we have mentioned briefly show some gaps in the social capital literature in connecting social capital and collective action.

5. Sharing and challenging common knowledge

5.1. Sharing common knowledge towards collective action: Nodes L₃ and L₄

For common knowledge to function as an incentive mechanism or institutional arrangements for collective action, it is not enough to formulate it but it also has to be shared or diffused effectively among the members of the community. In other words, the common knowledge has to be habitualized or internalized. According to Berger and Luckman (1966) in their argument about social constructionism, such internalization is a long-term process of consolidating one’s own beliefs, attitudes and values, when it comes to moral behaviour. While common knowledge internalized becomes a frame of reference for community members to decide upon their action inducing optimal amount, it is also important to note that there is also a possibility that common knowledge is challenged intentionally or unintentionally. If it is assumed that internalization automatically creates collective action without any form of challenge, we would fall into the pitfall of over-socializing the model of the human actor. To understand either possibility, i.e. common knowledge being shared by the members of a community (L₃) or being challenged by community members (L₅), we need to
understand the condition in which the common knowledge is shared among the community members (Tuomela 1995; 2007).

According to Tuomela (1995; 2007), common knowledge is shared when agents believe such attribution is reciprocally held by other actors in the same community. Additionally, this belief needs to be mutually held and shared among the majority of the community members (Tuomela 1995; Davis 2002). If we put his argument in the context of collective action for CPR management, this implies that each individual member in the community would consent to the given common knowledge showing (Gilbert 1990; Ishihara and Pascual 2012). While individuals consent to the content of common knowledge and to act collectively, they still retain a certain degree of freedom to rescind their consents (Gilbert 2006). The sharing of common knowledge does not guarantee the creation of collective action, but rather just creates a tendency among the community members to act collectively and to follow the institutions (Elder-Vass 2010), thus allowing room for challenge to arise to common knowledge from within the community, intentionally or unintentionally. For collective action to be successful, a majority of members must share common knowledge and give consent to it as the legitimate symbolic formula.

5.2. From challenging common knowledge to the failure of collective action: Nodes L₅ and L₆

Despite the fact that community members tend to share common knowledge, it does not eliminate the challenges from inside. While most often the dominant groups in the community monopolize the symbolic power and impose their preference as common knowledge to marginalized groups in the community, they are not automatically free to foster collective action in their desired way. This is due to the sharing process of common knowledge which does not eliminate the individual freedom to rescind individual commitment to the common knowledge. The challenge to common knowledge may occur in more unintentional forms, such as misinterpretation, or more intentional forms, such as resistance to follow institutions or refusal to internalize common knowledge.

Firstly, not all members can always interpret common knowledge as the dominant group would wish, but, rather they can misinterpret its content. As Hodgson (2000) argues by quoting Wittgenstein, “there are all sorts of interpretive problem involved in moving from the existence of rule to behaviour that follows the rule. The feeling that one is being guided by rules does not guarantee that the rules are being followed” (ibid:61). That is, the existence of common knowledge does not guarantee that community members would accordingly accept them. Rather it just creates a tendency for members of the community concerned to follow
the CPR institution (Elder-Vass 2010). It is too simplistic to assume that internalization occurs without resistance, or that common knowledge is directly linked to (collective) action through the process of internalization.\(^7\) Agents are not mere rule/norm followers, they are also rule/norm improvisers (Taylor 1993). There is always room for human agency to play a part (Ishihara and Pascual 2012). Secondly, a more severe issue is that some members may not share the imposed common knowledge through symbolic power thus not acknowledging its legitimacy. The intentional challenges to common knowledge may not be common however; the marginalized group may challenge and disclose the arbitrary nature of common knowledge especially when the marginalized groups have to bear a disproportionate cost of the collective action (Taylor 1993).\(^8\)

5.3. Common knowledge and the difference between ‘bonding’ and ‘bridging’ social capital

Whether common knowledge is shared or challenged within the community is influenced by the types of social capital, i.e. ‘bonding’ social capital and ‘bridging (or networking)’ social capital. It is often argued that bonding social capital refers to strong horizontal ties inside the community, which may become the basis for narrower sectarian interest, whereas bridging social capital refers to intra-communitarian (weaker) ties that give legitimacy to common purpose, such as collective action (Granovetter 1973; Putnam 2000; Woolcok and Narayan 2000; Adger 2003). The social capital literature tends to favor the public character of ‘bridging’ social capital and associate positively this type of social capital to collective action (Woolcok 1998; Adger 2003), whereas ‘bonding’ social capital is negatively associated with what is often termed as the ‘dark side’ of social capital such as nepotism and mafias (Portes 1993; Woolcok 1998). Rather, we argue that bridging social capital contributes to sharing of the common knowledge among the members who do not necessarily recognize themselves as community members, whereas bonding social capital contributes to sharing of common knowledge among members from the same community.

On the one hand, in the presence of bridging social capital, various actors inside a heterogeneous society are interconnected making possible for the common knowledge to be shared among different actors from different communities. To this end, bridging social capital

\(^7\) The concept of internalization (Berger and Luckmann 1966) and its application by institutional economists to encounter problems of social embeddedness (Aoki 2001a; Aoki 2001b; Vatn 2005) suffer from this simplistic view. As a result, it has fallen into an ‘over-socialized’ model of human agency.

\(^8\) However this challenge is not guided following a neoclassical rationality idea. It is the dominant group who defines what should be termed ‘rational’ (Foucault 1965; Bourdieu 1990). As Spivak (1988) points out it is difficult to reflect the voice of the marginalized group within the public discourse which is seen to determine common knowledge. Disclosing information about the arbitrariness of common knowledge is often the objective of marginalized groups within a community and thus the legitimacy of common knowledge is implicitly negotiated in everyday social life practice (Bourdieu 1990; Cleaver 2003).
enables the creation of a collective action that goes beyond the communal boundary. This is necessary in the case of CPRs which go beyond the ‘traditional’ communal boundaries like basin management or global commons such as atmosphere. But at the same time we must be aware of the fact that sharing of common knowledge among heterogeneous actors may entail imposition of common knowledge by the dominant group to marginalized groups. In other words, bridging social capital strengthens the dominant group’s symbolic power, which in turn enables the group to disguise the arbitrariness of common knowledge. But this does not mean that the optimal amount of collective action is achieved. Rather it implies that what is viewed by the dominant group to be an optimal level of collective action is achieved. Often, social capital theories based on game theory ignore this institutionally recreated nature of the concept of optimality.

By contrast, the social capital understood as bonding social capital is likely to foster challenges to common knowledge thus providing a weakest link between social capital and collective action. This is due to the possibility of bonding social capital more easily enabling the marginalized groups to form their own discourses which, in turn help them to realize that their perceived costs and benefits from collective action is different from that implied by the common knowledge. In other words we argue that bonding social capital enables the marginalized group to form “subaltern counter-public” which enables the powerless to form their voice by forming their own public sphere (Benhabib 1992; Fraser 1992). Without the existence of such sphere, the powerless might not be able to recognize their powerlessness (Scott 1985; Spivak 1988). Thus, bonding social capital may contribute to the empowerment of the marginalized groups by enabling them to raise their voices in natural resource management. To this end, we therefore diverge from the dominant trend in the social capital literature, and we would argue that bonding social capital has its own utility as it enables the marginalized groups to realize their own cost and benefit of collective action. This may empower them, thus, opening opportunities for a more inclusive collective action toward managing complex environmental goods such as CPRs. In turn, this might lead to a more efficient management of the CPR in those cases where non-dominant groups are the primary users of the CPR and have the knowledge to best manage it (Agrawal 2001). At the same time, it must be noted that bonding social capital does not contribute to solving the collective action problem which goes beyond the communal boundaries.

In this section we have argued for social capital to create collective action; common knowledge needs to be widely and mutually shared among community members. We termed this process as mutual sharing, and not internalization, to avoid the ‘over-socialized’ model of human actors. Although internalization of common knowledge does occur, actors always have the freedom not to choose according to the rules/norms. Thus the creation of common
knowledge and its sharing does not automatically create collective action. In other words, common knowledge is susceptible to challenges, from within the community, whether it be conscious or unconscious, with the possibility of failing to foster collective action. Whether the common knowledge is shared or challenged depends on the type of social capital that is prevalent in the community.

6. Conclusion

In this paper we have argued that current theories of social capital a la Putnam are insufficient to explain why social capital can foster collective action and challenged the widespread notion that social capital is instrumental in lowering the transaction cost that arises in the process. In addition, we have argued that this does not just deprive social capital theories from its explanatory power in creating collective action but it also results in them falling into the pitfalls of either ‘over-socialized’ or ‘under-socialized’ models of human agency. In this sense we concur with Harris (2001) in that social capital theories have depoliticized the very political nature of social capital which is instrumental in creating collective action. We have thus attempted to bring in the concepts of common knowledge and symbolic power to re-capture the political nature of the social capital.

In this paper, we have identified the main processes by which social capital may contribute to create collective action for managing complex environmental goods such as common property resources: first, the creation of common knowledge (L1 c.f. Figure 1) and second, the diffusion of common knowledge (L3). Here we interpret common knowledge as the understanding of the preference of others. It is the common knowledge that enables agents to act together and to bear the costs of collective action. In the face of limited cognitive capacity, such common knowledge is socially constructed by generalizing preferences in turn represented by symbolic formulae. This has led us to address the question of whose preference should be represented in that common knowledge. We have argued that the process of creation of common knowledge is not a simple process of averaging out the preferences of all community members. Rather it is a process where some dominant groups have more power to impose their preferences as common knowledge than other groups. This power is termed as symbolic power, following Bourdieu (1990).

For collective action to be successful, it is not sufficient to create common knowledge but common knowledge has to be shared or internalized among community members. When common knowledge is shared and the majority of the community members commit themselves to the creation of collective action, the social capital leads to the creation of collective action. But at the same time, since common knowledge is susceptible to
misinterpretation and not all the members share the common knowledge, common knowledge can be challenged (L₅) and collective action may fail (L₆). By creating two paths for the social capital, i.e. the diffusion of common knowledge and the challenge to it, this paper has avoided the pitfalls of ‘over-socialized’ and under-socialized’ models of human actors. We have argued that social capital is very political and contested and that collective action is a complex interplay of common knowledge, symbolic power and human agency (Cleaver 2003; Mosse 2006).

It is important to understand the power relations inside the community when designing a policy of CPR management, especially as the dominant groups are not necessarily the primary CPR users and the holders of the knowledge about CPR management. In other words, relying on the existing common knowledge may not provide the socially and ecologically optimal amount of collective action or may force the marginalized groups to bear a disproportionate cost of the collective action. In this case, social capital would serve only the objectives of the powerful in detriment of the disadvantaged groups of the community. More importantly, policies based on such anti-politics machines are not only likely to fail in promoting sustainable use of CPR but they also endorse and encourage the re-production of current social structures, which are not capable of yielding optimal ecological or social outcome.

As concluding remarks, we would like to discuss some of the policy implications from our argument on social capital. Taken all together, our argument on social capital suggests that the policy for designing CPR management (or co-management between community and other stakeholders) requires a nuanced analysis of social capital by carefully mapping out different types of social capital and its functions (Lawrence, Molteno et al. 2010). It is naïve to assume that bridging social capitals has a positive impact on the provision of environmental goods or CPR management, whereas bonding social capital has a negative impact on those as some of the policy papers assume (Bank 1996; Narayan and Woolcok 2000; Pretty 2003).

Our argument has shown that bonding and bridging social capital have different functions, weaknesses and strengths. On one hand, bridging social capital has an advantage in creating collective action at the inter-communal level, such as basin-management since bridging social capital is conducive to diffusing common knowledge. However it also points out the possibility that it may also exacerbate the hierarchical power relations between the dominant group and marginalized groups by enforcing the dominant group’s interest in CPR management and in the common knowledge. For example, if the marginalized group(s) are the main resource-users, but are excluded from the decision-making process for CPR, a policy that strengthens the bridging social capital may further impoverish the marginalized
group(s) and increase the inequity between these groups. On the other hand, bonding social capital may contribute to raising the voices of the marginalized groups’ decision-making process of CPR management and to representing their interest in the creation of common knowledge since bonding social capital is more conducive to the creation of common knowledge. At the same time it may negatively contribute to the creation of collective action which goes beyond the ‘traditional’ boundaries of community which is often required for the larger CPRs. Here there is a need to assess the balance between achieving the environmental goals, such as creating collective action for CPR or provision of environmental goods and poverty alleviation goals. At a more practical level, we will suggest three points of focus in the nuanced analysis of social capital: (i) the availability of bonding and bridging social capital, (ii) the social distance between the dominant and marginalized groups and (iii) the scale of collective action required for CPR management.

Finally we want to point out that these analyses of social capital are not just important for designing CPR management (Plummer and FitzGibbon 2006), but also for designing such policies like Payment for Environmental Service (PES) schemes. PES has gained increasing attention in the policy arena as a promising tool for the conservation of biodiversity and provision of environmental services (Ferraro 2001; Engel, Pagiola et al. 2008; Engel and Palmer 2008). It is defined as a voluntary transaction where a well-defined environmental service is transferred from buyer to provider, if the provider secures the provision of such service (Wunder 2005). The PES follows the traditional rational choice model (Van Hecken and Bastiaensen 2010). PES is based on the assumption that collective action which is necessary for provision of environmental service(s) can be created if PES can change the cost-benefit structure of the collective action through providing financial subsidies. However, recent evidence shows that implementation of PES is not a straight forward process as the rational choice model suggests (Clements, John et al. 2010; Kosoy and Corbera 2010; Pattanayak, Wunder et al. 2010; Vatn 2010; Narloch, Pascual et al. 2012). These authors argue that collective action towards conservation and provision of environmental service is largely based on reciprocity (Narloch, Pascual et al. 2012) and PES heavily depends on community engagement (Vatn 2010). In other words, these policies based on monetary subsidies influence common knowledge for CPR management. When PES supports the existing common knowledge by strengthening the monitoring system or providing legitimacy by making it a part of national policy it may create a ‘crowding-in’ effect. But at the same time, PES erodes the common knowledge and it may also cause a ‘crowding-out’ of moral engagement (Vatn 2010). Policies like PES also require careful analysis of social capital (Van Hecken and Bastiaensen 2010).

In this paper we have argued that social capital’s ability to create collective action heavily
depends on its political nature. We concur with Harris (2001) and Bebbington et al.’s (2004) claim that current policy-related social capital ‘de-politicizes’ the very political nature of social capital. We hope that our approach based on integrating the ideas of common knowledge and symbolic power contributes towards recognizing the political nature of social capital and ‘re-politicizing’ this policy. The future challenges still lie in advancing the construction of the notion of power and incorporating aspects of power into policy while at the same time acknowledging institutional arrangements.


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