

RULES, NORMS AND THE PURSUIT OF SUSTAINABLE LIVELIHOODS¹

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Summary

The central aim of this paper is to review the current understanding of how institutional arrangements can either encourage or discourage the pursuit of sustainable livelihoods. It explores the relationship between resources and capital, examining the nature of property rights and regimes, looking at the ways in which social exclusion affects the pursuit of sustainable livelihoods, and critiquing Common Pool Resource (CPR) theory. It concludes that socially shared rules can encourage sustainable livelihoods provided the rate at which individuals extract benefits from the resource base remains relatively low, and distribution of benefits remains wide. However, when such rules reinforce more narrow distributional patterns, livelihoods can be profoundly unsustainable, irrespective of the physical state of the resource base.

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Table of Contents

I. Introduction	3
II. Sustainable Livelihoods	4
Sources of Environmental Change	5
Insurance and Response	6
III. Property, Entitlement and Social Exclusion	8
Exchange and Power	8
Authority, Exclusion and Property Regimes	10
IV. Rules, Norms and Sanctions	12
Systems of Sanction	15
Cooperation and Trust	16
Defection and Distrust	18
A Theory of Institutional Conflict	20
V. Common Pool Resource Theory	24
A Critique of CPR Theory	26
VI. Final Propositions and Conclusions	29
VII. Bibliography	31

I. Introduction

Concerns about environmental degradation have stimulated new thinking about the ways in which social arrangements affect the use and distribution of natural resources. Challenging gloomier predictions about human-environment interaction, institutional theories suggest that human societies can avert a tragedy of the commons, if they devise and adhere to the right set of rules.³ Although rules provide order, however, they do not necessarily provide well-being. To the extent that they dictate social behaviour, rules influence the ways in which individuals pursue a secure and sustainable livelihood. In so doing, they set the parameters within which individuals, and groups of individuals, prepare for and respond to the effects of environmental change.

Social institutions, the rules that individuals share and use to regulate collective behaviour, represent both an obstacle to and an opportunity for the pursuit of sustainable livelihoods (Mearns, 1996b: 2). In the sense that they facilitate collective action, institutions enable individuals to transcend the limitations of acting in isolation. To the extent that they encourage conformity, however, institutions also maintain and reproduce the status quo, often perpetuating adversity (Goetz, 1996: 10; Berry, 1989: 50; Bates, 1989: 6-9; 1995: 29-47; Kabeer and Subrahmanian, 1996; Kabeer and Murthy, 1996; Kabeer and Subrahmanian, 1996: 17; Agrawal, 1994: 268; Gore, 1993: 452).

A central aim of this paper is to review the current understanding of institutions and to shed some light on the ways in which institutional arrangements can encourage or discourage the pursuit of sustainable livelihoods. The text is divided into six sections. The Section II explores the relationship between resources and capital, conceptualising the principal elements that constitute a sustainable livelihood. Section III focuses on the nature of property rights and regimes, examining the ways in which social exclusion affects the pursuit of sustainable livelihoods. Section IV considers the ways in which institutions, norms and sanctions encourage or discourage particular forms of behaviour. Section V examines and critiques Common Pool Resource (CPR) theory. The final section concludes the paper by developing propositions about the conditions under which individuals are able to maintain secure and sustainable livelihoods.

³See E.Ostrom (1996; 1995; 1990); Keohane and Ostrom (1995); E.Ostrom et al (1993; 1994); Blomquist (1994); Blomquist et al (1994); Agrawal (1994); Lam (1996); Tang (1994); Libecap (1995); Blaikie and Brookfield (1987); Martin (1995); Mitchell (1995); Opschoor and van der Straaten (1992); Swift (1994; 1993); Wade (1988a; 1988b; 1992; 1995); White and Runge (1995); Mearns (1996a; 1996b; 1995); Scoones (1996); Bromley (1992); Runge (1992).

II. Sustainable Livelihoods

At a very basic level, sustainable livelihoods are about the ways in which individuals, and collectivities of individuals, use resources in order to survive. A resource here implies a good or service which individuals use to pursue, and ideally satisfy, their interests.⁴ Resources can be divided into two general categories: natural and social. Natural resources are the physical inputs which generate value and productivity in people's lives. Examples here would include rainfall, soil, sunlight and temperature. Social resources are the social institutions and relationships that facilitate this process (Coleman, 1990: 300-2).

Capital and resources are productive in the sense that they both facilitate ends which would not be attainable in their absence (Coleman, 1990: 302). Like resources, capital can generate value and productivity for those who have it at their disposal.⁵ Its value, however, is defined in terms of its potential. Capital can be accumulated and transferred, but once it is used for a specific purpose, it becomes a resource. A useful analogy between capital and resources is the distinction between money in the bank and money which is used to purchase particular goods and services. Social and natural capital, then, represent stocks of relationships and physical inputs which, when exploited, become resources.⁶

Along with social and natural capital, there are two other important categories: human and economic capital (Coleman, 1990: 297-300; Gaventa,⁷ 1996). Human capital refers to the skills, knowledge and intelligence that an individual holds at any point in his or her lifetime (Coleman, 1990: 297-300). Skills and knowledge can be built upon by broadening one's social relationships, or investing economic capital (see below), or re-investing human capital (e.g. reading a book). They can also be depleted with disuse (i.e. forgetting the name of an acquaintance or forgetting a particular skill) and with overuse (i.e. trying to make a decision under stress). Whether intelligence can be improved or depleted is well beyond the scope of this paper (and the

⁴A central assumption here is that individuals pursue interests in a rational manner. Unless otherwise stated, "**rationality**" simply implies that one can identify one's interests and pursue them with intent and purpose. This should not be confused with self-interested rationality, which assumes that individuals act in order to maximise their own utility. Instead, this conceptualisation assumes that individuals seek to maximise their '**well-being**' ("the type of life one leads, what one can do and can be," Gore, 1993: 440), and that of those towards whom they are altruistic.

⁵Suggesting that capital can be divisible. This idea is explored in greater detail below.

⁶The relationship between these two forms of capital is explored in greater detail below. For the time being, these broad definitions will serve to clarify the ways in which institutions relate to the pursuit of sustainable livelihoods.

⁷Note that Gaventa separates capital into four categories - human, environmental (which I call natural capital), economic and social.

knowledge of this author). To the extent that it facilitates the acquisition of skills and knowledge, however, it can play an important role in developing human capital.

Economic capital refers to the sum total of all of one's material possessions and investments, which can be converted into economic resources (money). One can use economic capital to acquire other forms of capital, including human capital (labour and knowledge), social capital (loyalty, networks) and natural capital (water, land). Likewise, one can use human capital to acquire economic, social and natural capital, and so on. An important point here is that one form of capital can be used to acquire other forms of capital.

Sources of Environmental Change

Sustainable livelihoods are also about change. Two distinctions are particularly relevant to this discussion. One is the distinction between natural and human-induced environmental change. Another is the distinction between exogenous and endogenous change. Natural environmental change simply implies that a transformation in the quantity or quality of resources (natural or social) is due to forces beyond human action or control. These changes are often referred to as 'acts of God'. In contrast, human-induced environmental change refers to transformations caused by social activities or processes.⁸

Exogenous change implies that a change is due to actions and processes which are beyond the control of a particular community. 'Community' simply refers to a group of individuals who share a common interest (which is explored in greater detail below). Correspondingly, endogenous change indicates changes that are due to processes and activities within the control of a particular community (Mearns, 1996a: 113). In so far as community and "common interests" are influenced by subjective preferences, perception plays a large (but not exclusive) role in the distinction between exogenous and endogenous change.

Natural resources are either renewable or non-renewable. Renewable resources imply a stock or flow of inputs, which, when used, can be replenished at a later point in time. An important element here is that the conversion from renewable capital to renewable resources is a temporary, reversible process. Utilisation of non-renewable resources, however, suggests a relatively permanent, irreversible process, or, if not

⁸Of course, the distinction between natural and human-induced environmental change is often blurred by contradictions between knowledge (what is true) and perception (what one believes is true). Indeed, one could argue that competing perceptions of natural versus human-induced environmental change lie at the heart of many environmental debates.

permanent, one in which the time required to replenish capital and/or resources exceeds an individual's discount rate (Nostrum, 1990: 35).

The scale of environmental change can be measured in terms of duration and magnitude. Duration simply refers to the time that elapses between the onset and termination of environmental change.⁹ Magnitude entails three basic elements. One is the total geographic area affected by the environmental change. A second is the change in the actual quantity of resources. A third element is a transformation in the quality of a resource (i.e. its capacity to serve an individual's particular need) (Blaikie and Brookfield, 1987: 6-14).

Implicit here is a distinction between direct and indirect interests. As Ostrom (1990: 30-32) argues, a resource base represents a public good,¹⁰ which one can choose to maintain, and from which one can extract private benefits (resource units). Interests are direct, then, when one's capacity to meet one's livelihood needs is directly related to the health and longevity of the resource base (i.e. its capacity to provide benefits; Blaikie and Brookfield, 1987: 6-10). Interests are indirect, however, when an individual's ability to meet one's livelihood does not depend upon the well-being of the resource base.¹¹

Insurance and Response

Finally, sustainable livelihoods are about the ways in which individuals prepare for and respond to the effects of environmental change. Davies (Forthcoming: 4-6) distinguishes between livelihood and subsistence strategies, both of which individuals pursue during times of relative security. Livelihood strategies, she argues, "imply relative success," in the sense that they "make people more secure and can lead to positive adaptation," (i.e. reversible strategies which are pursued by choice). Subsistence strategies "imply relative failure," in the sense that they "result in greater vulnerability, necessitate the pursuit of negative adaptation, and are followed by the poor alone," (Forthcoming: 5).

⁹Although, as Scoones (1994) argues, this is not to suggest that environmental conditions reach and maintain "optimal" equilibria.

¹⁰Goods or services which, when consumed by a group member, cannot be feasibly withheld from other members of the group Olson (1965: 14). Also see Keohane and Ostrom, (1995: 3-14).

¹¹This is not to suggest that individuals with indirect resource interests do not have direct resource interests of their own. A European with an indirect interest in the health and longevity of rainforests in Southeast Asia, for instance, can easily have direct resource interests. Resource interests vary in the sense that individuals possess different "preference intensities," which can vary over time, space and/or socio-economic status (Martin, 1995: 73).

Returning to the distinction between resources and capital, this conceptualisation suggests that livelihood strategies enable individuals to increase

To the degree that rules represent “guides to future courses of action,” (Knight, 1992: 67), social institutions, particularly ones relating to property and entitlements, play an important role in reducing uncertainty about the actions of others.

III. Property, Entitlement and Social Exclusion

Property is a claim that an individual asserts over a stream of benefits (Bromley, 1992: 4; Pearce and Warford, 1993: 245). One’s capacity to capture a resource depends in part upon the degree to which others agree to respect this claim. Property rights facilitate this process by specifying the conditions under which individuals can lay claim over particular resources (Coleman, 1990: 33-40). Formal or informal (see below), a property right simply implies a claim on property that others (either with or without the enforcement of a third party) will agree to uphold (Bromley, 1992: 4).

An important point about property is that it represents a resource in which individuals have an interest, and over which they seek control. One’s capacity to control the distribution of a resource depends upon the extent of one’s endowments and entitlements. Endowments are an individual’s legitimate command over a particular resource. Entitlements are the benefits one derives from using these endowments (Devereux, 1996; Gore, 1993; Mearns, 1996c). If a piece of land represents one’s endowments, then, the benefits one derives from raising cattle constitute one’s entitlements (Devereux, 1996: 13). Both of these factors depend upon norms of legitimacy (i.e. what constitutes “legitimate command”),¹² which are reinforced by formal and informal institutions.

As Gore (1993: 442-3) and Devereux (1996: 4-5) argue, however, “legitimate command” is rarely absolute or uncontested. Instead, one’s command over property varies with one’s capabilities (human, economic and social capital) and the “excludability” of the resource (Robin Mearns, personal discussions; Mearns, 1996c). Access, admission and priority to a particular entitlement can also depend upon one’s capacity and one’s willingness to follow a particular social rule. As Devereux (1996: 10) argues, individuals can have ownership, control, access and influence over a particular resource (Devereux, 1996: 10). Ownership, he argues, implies a right to use and benefit from a resource, a right to rent and sell the resource to others, and a right to exclude others from enjoying its benefits or reducing its value (Devereux, 1996: 10).

¹²See Gore (1993: 440-1) for a broader review of Sen’s moral critique of utilitarianism and liberty.

Exchange and Power

In theory, then, ownership implies perfect divisibility and zero externalities (Coleman, 1990: 34). To the degree that control, access and influence imply the existence of externalities (i.e. unlike ownership, they are not absolute), they also imply the importance of power. Once again, it is important to stress that a social relationship entails an actor with an interest over which another actor has control (Coleman, 1990: 47-58). Interest here implies that an individual places value on a resource, or stock of resources (capital).

Coleman (1990: 45-8) argues that individuals can obtain control, access or influence over a resource in which they have an interest by relinquishing other resources over which they have influence, access or control. In many instances, they undertake this process by temporarily vesting a right to control their resources (and their actions) in the hands of another party (Coleman, 1990: 45-8). This type of arrangement implies a *social exchange*. Examples here would include exchanges of labour (human resources) for money (economic resources/capital), money for land (natural/economic resources) and friendship for loyalty (social capital).

In other situations, individuals are forced to relinquish their rights over a particular resource in order to pursue an activity or resource in which they have no interest. This type of arrangement implies a *power relationship*. Power here is exercised when one individual induces another to act against his or her own interest (Coleman, 1990; Giddens, 1979; Knight, 1992). As Knight (1992: 42) argues, the importance of power relates to the fact that certain individuals can develop and use social institutions to get others to act in ways which suit or satisfy their own preferences.

The legitimacy of any social relationship (and the authority it confers) depends upon the degree to which individuals can choose to vest and/or withdraw the right to control their behaviour. Coleman (1990: 172) calls this the “internal morality” of a social system. As he states, “internal morality is absent when individuals are unable to recover actual control over their actions by withdrawing rights of control through use of institutions *within* the system of authority,” (1990: 173, emphasis added). An absence of internal morality, then, implies that the institutions on which a relationship is based undermine the interests of one or more of its participants. It is this violation that fosters, and indeed legitimates, the pursuit of “unruly social practices,” (Gore, 1993: 447).¹³

¹³Of course, internal morality is relative in the sense that it stems from the subjective preferences of the individuals who wish to withdraw from the relationship.

Unless one is able to exclude others perfectly from one's capital and resources (i.e. unless one's capital and resources are absolutely private),¹⁴ one may be subject to the power of others. However, one's control, access and influence over ones' own resources, and the resources of others, may temper this influence.

Authority, Exclusion and Property Regimes

The importance of conceptualising power in this way is that it clarifies the nature of authority, and how authority affects the operationalisation of different property regimes. Authority here refers to a relationship in which an individual legitimately exercises power over another social actor. As Coleman (1990: 66) argues, it implies a "right to control another's actions." Once again, legitimacy depends upon prevailing social norms, which are reinforced by formal and informal social institutions. Autonomy indicates the degree to which one can exercise authority without hindrance from external, competing forms of authority.

Four types of property regime are particularly relevant to this discussion: open access resources (OARs), private property regimes (PPRs), state property regimes (SPRs) and common property regimes (CPRs). Open access resources are essentially natural resources without property rights (Bromley, 1992: 4; Libecap, 1995: 162-64; Devereux, 1996: 11). As such, they lack rules prescribing or proscribing who can or cannot gain access. Private property regimes are at the other end of the spectrum, suggesting absolute divisibility and excludability. Most PPRs are actually relative PPRs in the sense that resources are not absolutely divisible or excludable, but they are treated *as if* they were by formal and informal institutions.

In private property regimes, rights are conferred onto individuals or firms (organisations of individuals, working together to maximise monetary return in a market exchange), giving them the authority to exclude non-members and to decide the institutions that govern relationships within and among competing regimes (Pearce and Warford, 1993: 245-50; E.Ostrom et al, 1994: 7; Blaikie and Brookfield, 1987: 186). State property regimes are similar to PPRs in the sense that they are also divisible and excludable (Devereux, 1996: 11). Exclusion in SPRs is facilitated by the fact that the "owner" and the "enforcer" are theoretically the same entity. Because states also provide public goods, however, SPRs can be common property regimes and open access resources, depending on the rules the state decides to put in place. Examples here would include public parks (a CPR) and abandoned, state-owned land (an OAR).

¹⁴Note that recognition and enforcement by the state do not guarantee absolute privacy.

Common property resources are essentially depletable public goods. They are common in the sense that the costs of exclusion are often too great for one party to bear and utilisation can create social costs. Classic examples include waterways, rangeland, unfenced forests and the greatest CPR of them all, air. CPR dilemmas arise when utilisation diminishes the capacity of others to derive benefits from the resource base (i.e. when it creates negative externalities: see below).

The primary distinction among private, state and common property regimes rests on the terms of exclusion (often enforced by the rule of law). Private property arrangements (and the membership they confer) are based on an exchange of economic capital. Individuals may trade their labour or capital for the right to use a private property resource, but authority (the final say regarding how the resource is used) ultimately goes to the individual (or collectivity) who owns title to the resource. State property arrangements often depend upon the decision making structure of the state agencies responsible for the resource.¹⁵

Common property differs from state and private property in the sense that no one can own or control the resource independently. Instead, given that everyone has access to the resource, the best one can hope for is influence (Devereux, 1996). In so far as they influence the activities of others, social institutions play an important role in governing common property resources.

An important point about property is that it reflects a value over which individuals can secure (an often imperfect) claim. As Scoones (1996) argues, however, natural and human-induced environmental change can affect the value that individuals attach to property. This feature can, in turn, affect choices regarding property regime, institutional arrangement and levels of investment. Regime type, institutions and investment levels, Scoones asserts, tend to correspond directly with the value that individuals place on a particular resource (1996:3). Thus, low-value resources, with "unstable and low production levels," tend to have open or common property resource regimes, weak institutions and low levels of investment. In contrast, high-value resources, with stable and high production levels, tend to have private or (small group) common property regimes, strong institutions and high levels of investment (Scoones, 1996: 3).

What this implies is that individuals with minimal resources and capital will be at a double disadvantage. First, assuming that high-value economic and natural resources entail higher costs than lower value resources, individuals with low levels of social resources and capital will be less able to secure stable, high-production

¹⁵Note that individuals and groups of individuals can challenge the state's authority over SPRs, and its authority to recognise particular PPRs. Ostrom's analysis (1990) suggests that it is this capacity (facilitated by formal and informal institutions) which makes for enduring CPRs. See below.

resources to pursue their livelihoods. Indeed, evidence suggests that those with low income levels often depend upon open access or "weak" common property regimes for their livelihood (Devereux, 1996; Scoones, 1996; 1994; Mearns 1996a; 1996b; 1996c; Mackenzie, 1995; Jackson, 1995; Heyzer, 1995b; Oniang'o, 1995; Joekes, 1995; Swift, 1994; Bromley, 1992). And, as Devereux (1996: 14) argues, even minor entitlement or endowment changes can deprive these groups of access to vital common property and/or open-access resources.

Second, assuming that one's capacity to shape social institutions depends upon the degree to which one can use resources and capital to satisfy one's interests (Knight, 1992), a lack of resources and capital appears to reinforce a condition of "social disadvantage". By virtue of their marginal status in society, the poor and disadvantaged may have little capacity to influence the rules on which they depend for access to economic and natural resources.

Both of these factors emphasise the importance of rules, and significantly, the ways in which rules influence social behaviour.

IV. Rules, Norms and Sanctions

As noted in the Introduction, social institutions are rules which are socially shared (Knight, 1992: 2-3; Ostrom, 1990: 51). In this respect, they differ from what Knight refers to as "rules of thumb," or rules that one uses to shape one's own behaviour (1992: 68). A central assumption here is that social institutions provide a common meaning for those to whom they apply. Another common assumption is that social institutions are both interpretable and unambiguous (Ostrom, 1990: 51). As Knight states, many institutional theories assume that, "everyone knows the applicability of the rules and that everyone knows that everyone knows, and so on," (1992: 75). Although this assumption creates a number of problems (see below), it represents an essential starting point for any theory about rules and the ways in which rules influence social behaviour.¹⁶ The value of assuming "perfect interpretation" is that it provides a baseline from which one can explain observations which do not conform to the original assumption (Knight, 1992: 16-8).¹⁷

¹⁶Knight (1992: 76) proposes that individuals interpret rules and external behaviour by analysing i. what other people say about their own intentions; and ii. how they have acted in the past.

¹⁷Note that Knight (1992) uses this argument to justify using an assumption of "narrow rationality," which this paper rejects in favour of the "broad" conceptualisation described earlier.

A fundamental starting point for most institutional theories is that institutions are not organisations. Douglass North's clarification is reproduced widely in the institutional literature:

Institutions are the rules of the game of a society, or, more formally, are the humanly devised constraints that structure human interaction. They are composed of formal rules (statute law, common law, regulations), informal constraints (conventions, norms of behaviour and self-imposed modes of conduct), and the enforcement characteristics of both.

Organisations are the players: groups of individuals bound by a common purpose to achieve objectives. They include political bodies (political parties, the senate, a city council, a regulatory agency); economic bodies (firms, trade unions, family firms, cooperatives); social bodies (churches, clubs, athletic associations); and educational bodies (schools, colleges, vocational training centres) (parentheses in original; North, 1995: 23).

Social institutions, then, are the ties that bind individuals to organisations, regulating intra- and inter-organisational behaviour.

A second clarification relates to the distinction between prescriptive and proscriptive institutions (Coleman,¹⁸ 1990: 245-8; Ostrom, 1990: 139; Mearns, 1996b; 1996c). Prescriptive institutions are rules that stipulate what an individual is required or entitled to do (responsibilities and rights) or receive (rights and entitlements), often using incentives (positive sanctions) to encourage particular forms of behaviour. Proscriptive institutions stipulate what an individual cannot do, using negative sanctions to penalise transgression. Information about sanctions matters because it provides a rough guide about the choices facing other actors, and about the implications of failing to comply with social rules (Knight, 1992: 54).

A final and important clarification relates to the distinction between formal and informal institutions. As North argues, the fundamental distinction here "is one of degree," (1990: 46). Relatively speaking, formal institutions are the rules that any figure of authority uses to shape a particular form of behaviour (Ostrom, 1990: 50-51; North, 1990: 46-53; Knight, 1992: 171-3; Swift, 1994: 154; Levi, 1996: 48). Examples of formal institutions in the United States would include a constitution, a statute or a legal contract (North, 1990: 47). Examples of the Grameen Bank's formal institutions are rules that attempt to provide women with low-interest credit (Kabeer and Subrahmanian, 1996).

¹⁸Note that Coleman uses these concepts to distinguish among different sets of norms, which are contrasted with institutions below.

Informal institutions, by contrast, are the rules that individuals use to shape their own (social) behaviour (Ostrom, 1990: 51; Knight, 1992: 171-88; Swift, 1994: 154). Examples here would include an American Supreme Court judge's interpretation of the US Constitution (and the rules and sanctions that would accompany it), a police officer's enforcement of a traffic violation or the societal and household rules that enable men to obtain credit intended for female clientele (Kabeer and Subrahmanian, 1996). Informal rules, then, are the "working rules" (Ostrom, 1990: 51) that individuals use to shape their everyday behaviour.

Although they influence behaviour, informal institutions should not be confused with norms, as they often are in the institutional literature (North, 1990: 36-52; Uphoff, 1992: 4; Feeny, 1988: 171). Norms are preferences about how individuals should act in a particular situation. Rules are stipulations about particular forms of behaviour (which either conform or fail to conform to societal norms) with positive and negative sanctions. As Knight (1992: 69) argues, rules require a "forward looking quality" ("if you do this") and sanctions to back it up ("this will happen"). Although norms entail preferences about future behaviour and events, they lack the sanctions that empower social rules. Stating that individuals should not cut down trees, for instance, is a normative statement. Stipulating the conditions under which individuals cannot cut down trees, and specifying the penalties for doing so, is a rule.¹⁹

An important point here is that individuals design and create formal rules in order to influence informal rules and social behaviour (Knight, 1992: 171; North, 1990: 46-8; Coleman, 1990: 74; 243-66; Bates, 1995: 46-7; Giddens, 1979; Robin Mearns and Melissa Leach, personal discussions). For every norm, Coleman (1990: 260) argues, there exists a beneficiary (the party who expects to benefit from the norm) and a target (one who is expected to comply). In some cases, the beneficiary and the target are the same party, suggesting interdependence and mutual identity (issues which are explored in greater detail below). In others, norms, and institutions which influence norms, are designed to benefit a particular group of individuals. Their capacity to do so depends upon their ability to shape the behaviour of the target party.²⁰

¹⁹Despite these differences, it should be stressed that rules and norms are highly interdependent. Rules are important to norms in the sense that they provide a means through which a particular form of behaviour can be encouraged and enforced. Likewise, norms are important to rules in the sense that they influence the conditions under which particular institutions can arise, as North's analysis of the anti-slavery movement in the United States makes clear (1990: 84-7).

²⁰Indeed, the most effective institutions are those that shape norms with little or no need for external sanctions. In these circumstances, the norm is so fully internalised by the target that sanctions are effectively unnecessary. Examples here would include the loyal employee who identifies with the firm or the loyal spouse who identifies with the partner, often in spite of their own best interest (Coleman, 1990: 158-62).

As Knight (1992: 171-88) and North (1990: 36-49) observe, however, informal rules and social behaviour rarely conform with the stipulations of formal institutions.²¹ Three factors can widen this disparity. First, information about the rule and its sanctions may be false or misleading, encouraging inappropriate behaviour (Knight, 1992: 185-6).²² Second, individuals may discount the probability of detection and/or punishment. Finally, individuals may equate adherence with unbearable costs, either for themselves or for those with whom they share interests.

Implicit here is an important distinction between ignorance and disobedience. In the first instance, individuals **fail to follow** the letter of the law because they simply do not know any better. In the latter two, they **disobey** the formal rules because they believe that adherence will create unbearable costs, and/or they believe that the benefits of disregarding the rules will outweigh costs of enforcement .

Systems of Sanction

Ignorance and disobedience, then, create wide-ranging costs for those authorised and/or expected to uphold a particular rule. Three types of cost are particularly important here. One is the cost of obtaining information about the activities of the target audience. A second is the cost of transmitting information about a particular rule or sanction. A final cost relates to the need to deliver negative or positive sanctions when the rule is broken or followed.

As Coleman (1990: 278-85) argues, all three of these costs can vary with the number of enforcers and the size and preferences of the target audience. “Incremental sanctioning,” he argues, implies situations in which sanctions with relatively low costs are implemented and enforced by a large number of people. “Heroic sanctioning,” by contrast, implies that sanctions with relatively high costs are implemented and enforced by a small number of “heroic” sanctioners (see Table I).

Table I.

<u>Type of Sanction:</u>	<u>Cost of Sanctions:</u>	<u>Number of Sanctioners:</u>
Incremental	Low	Many
Heroic	High	Few

²¹Failed attempts to “introduce” the US Constitution into selected Latin American societies being useful cases in point (North, 1990: 100-03).

²²Indeed, individuals may be entirely unaware of the rule’s existence.

Incremental sanctions are effective when the costs of monitoring and enforcing rules are sufficiently low and/or the perceived benefits of achieving conformity are sufficiently high that large numbers of individuals will assume the costs of sanctioning social rules. They also work well when individuals are able to communicate effectively and efficiently. Effective, low-cost communication reduces the costs of sanctioning in a number of ways. First, it enables individuals to assess the ways in which others have acted in the past (Moore, 1990: 820-24; Coleman, 1990: 318-20; Putnam, 1993: 174). Second, it transmits information about the rules of the game, reducing uncertainty about rules and future behaviour. Finally, it reveals information about individual preferences, which enables social actors to develop mutual interests.

In order to work effectively, however, communication requires a standard and a medium through which individuals can accurately exchange opinions and observations. Two low-cost variations of standard and medium are reputation and gossip. As Moore (1994: 823) argues, reputation, and the means by which reputation is defined, transmitted and used in society, provide “powerful self-interest imperatives for honest dealing,” (also see Ostrom, 1995: 131-2; Humphrey and Schmitz, 1996: 9; Coleman, 1990: 319-20; Putnam, 1993: 174). To the extent that “word of mouth” transmits information about past behaviour, rules and intentions, it provides individuals with a low cost means of monitoring and enforcing social institutions.

In so far as individuals identify with the pursuit of a particular norm, mutual interests reduce the costs of (and the need for) monitoring the behaviour of others (Coleman, 1990: 243-4). If two people “identify” with the notion that people should not drink and drive, for instance, neither has to work very hard to ensure that the other follows the social rules that apply to this norm. Identification also perpetuates sanctions which encourage the pursuit of and adherence to a common norm. To the degree that individuals are satisfied by the same outcome, each has an incentive to reward others for working toward its realisation (Coleman, 1990: 274).

Effective communication also serves as a means by which individuals can “close” social networks of engagement. Closure here implies that individuals are tied to one another in some way.²³ Closure is important because it provides a way of binding individuals to others, and to the consequences of their actions. In so doing, it reduces one’s capacity to escape the effects and implementation of social sanctions

²³Note that closure is closely related to the concept of “embeddedness,” which implies the degree to which individuals and actions are situated within a particular network of relations. See Coleman (citing Granovetter, 1990: 302); Putnam (1993: 172); Tandler and Freedheim (1994: 1774); P.Evans (1996b: 1120).

(Kerkvliet, 1990: 267-8; Hirschman, 1978; Glance and Huberman, 1994; Ostrom et al, 1994: 167; Putnam, 1993: 174-90; Coleman, 1990: 318).²⁴

Cooperation and Trust

Incremental sanctions work most effectively, then, when information about the behaviour and intentions of others is relatively widespread (North, 1990: 55-58). Problems arise, however, when information is less forthcoming. As interactions over time and space increase, so do the costs of obtaining relevant information, creating broad scope for opportunistic behaviour (North, 1990: 58). As Toye argues,

‘Unless the principal is perfectly informed at zero cost about the actions of the agent, this relationship becomes problematic, in that the agent is given scope for opportunistic behaviour which benefits himself or herself and usually also reduces the welfare of the principal’ (Toye, 1995: 55).

When confronted with this situation, agents with privileged information have one of two options. They can either take advantage of the situation, or act as though the principal were fully informed about their activities. To the extent that experience reinforces perception, the outcome of this decision has enormous bearing on future decisions about behaviour and cooperation. In choosing the latter option, the agent demonstrates a willingness and capacity to forego an opportunity to pursue personal gain. Assuming that the principal interprets this to be a sacrifice, the decision to forego opportunity generates a social obligation, which may be reciprocated. More important, the decision satisfies and reinforces an expectation of trust.

A trusting relationship is important because it implies that the principal is willing to make a “low personal investment in monitoring and enforcing the compliance of the individual(s) with whom she has made a compact from which she believes she will benefit,” (Levi, 1996: 47).²⁵ To the extent that obligations generate reciprocity (Coleman, 1990: 306; Ridley, citing Sahlins, 1996: 119), the decision to forego opportunistic behaviour reinforces “the expectation that others will probably follow the rules” (Putnam, 1993: 111).

An important point here is that relations of trust mitigate the need to monitor and enforce each and every social arrangement (Putnam, 1993: 109-85; Levi, 1996: 47; Humphrey and Schmitz, 1996: 4-6; Coleman, 1990: 104). In so doing, they

²⁴Note that closure also puts the “offender” at a distinct disadvantage vis-a-vis those who enforce the rules. See below.

²⁵See Coleman (1990: 104) and Humphrey and Schmitz (1996: 4) for similar definitions.

liberate resources that would otherwise go towards the cost of monitoring and enforcing social rules. This dividend is commonly referred to as “social capital”.²⁶

Social capital provides value in the sense that it represents a stock of resources that can be drawn upon to meet particular needs. A growing literature suggests that trusting individuals can use social capital to provide a wide range of public goods, including public infrastructure (Ostrom, 1995; Ostrom et al, 1994a), healthcare (Tendler and Freedheim, 1994), education (Ostrom, 1996) and effective democracies (Putnam, 1993; Fox, 1996; Heller, 1996; Levi, 1996). Clearly, the implications for environmental management are large, and are explored in due course.

Defection and Distrust

For the time-being, however, the second option in the principal-agent dilemma requires further scrutiny. Assuming that individuals are somewhat less socially-inclined, what happens when the agent chooses to defect? Implicit in the foregoing discussion is an assumption that trustworthy individuals (i.e. those who do not defect) value the benefits of future interaction. In other words, their discount rate is relatively low (Ostrom, 1990: 35-7). Game theory and historical observation suggest that discount rates will remain low as long as individuals believe that they may need to interact with those from whom they could defect at some point in the future (see Glance and Huberman, 1994; Ostrom et al, 1994; 1994a; Blomquist et al, 1994; Levi, citing Sugden, 1996: 47).

A necessary condition here is that individuals believe that their well-being depends upon future interaction with those from whom they receive trust. In other words, trust is more forthcoming when individuals perceive interdependence²⁷ (Ostrom, 1990; Putnam, 1993; Libecap, 1995; White and Runge, 1995; Keohane and Ostrom, 1995). A central point about interdependence is that it lowers the discount rate and facilitates cooperation. Problems arise, however, when individuals believe that the benefits derived from short-term gain outweigh the costs of future non-cooperation. Individuals can pursue short-term opportunities in two particular ways.

²⁶See Coleman (1990); Putnam (1993); Levi (1996); Steer et al (1996); Fox (1996); Ostrom (1990; 1995; 1996); Ostrom et al (1994a); Mearns (1996b); P.Evans (1996a; 1996b); Heller (1996); Gaventa (1996); Goldberg (1996); for other variations on the role of trust, see Wade (1988b); Oakerson (1988); Tendler and Freedheim (1994); Moore (1994); Humphrey and Schmitz (1996); Ridley (1996).

²⁷Knight (citing Elster, 1992: 17) identifies three forms of interdependence: i. a relationship in which the benefits of each depend upon the benefits of all; ii. one in which the benefits of each depend upon the choice of all; and iii. one in which the choice of each depends upon the choice of all. Coleman (citing Friedman, 1990: 30) distinguishes between these forms of interdependence (which he calls “structural interdependence”) and “behavioral interdependence,” in which the actions of individuals are conditional upon the actions of others at a prior moment in time.

First, as the principal-agent dilemma suggests, they can do so when information about their activities is fully or partially concealed from those from whom they would extract rent (North, 1990: 74; Toye, 1995: 55). In these instances, individuals are free to use their own informal rules of engagement, because they are effectively “shielded” from the formal sanctions of others.

A second way in which individuals can pursue short-term gain at the expense of others is by structuring the formal and/or informal rules in a way that suits their particular interests. Assuming that individuals possess the necessary information and skills to pursue the institutional arrangements they believe will best meet their preferences, it is reasonable to assert that access to and control over institutions may reflect the asymmetrical distribution of power in a particular social setting (Berry, 1989; Bates, 1995; 1988; Mearns, 1996c; Gore, 1993). Examples here would include irrigators who use their close proximity to a reservoir to appropriate excessive shares of water, or polluters who transfer negative externalities onto downstream consumers. In each case, the tail-enders have strong incentives to negotiate institutional arrangements that would encourage top-enders to constrain their activities (Ostrom, 1995: 139-43). Given their poor geographical and/or socio-economic status, however, their capacity to do so will be significantly constrained.²⁸

The implication here is that neutral enforcement of any activity is effectively a public good, subject to problems of opportunism, free-riding and political persuasion (Putnam, 1993: 165; North, 1990: 58; Knight, 1992: 171-96; Ostrom, 1990: 42-3). As the foregoing discussion suggests, individuals will follow their own rules when discount rates are sufficiently low to generate perceptions of interdependence. Self-enforcement breaks down, however, when discount rates exceed the benefits individuals believe they derive from adhering to the rules (North, 1990: 55). It is under these circumstances that informal rules and patterns of behaviour deviate from the stipulations that constitute formal institutions.

In so far as formal rules are associated with personal benefits, individuals have strong incentives to ensure that these rules are followed (Knight, 1992: 188-9; North, 1990: 46-7). The costs of enforcing adherence, however, are often well beyond the resources and capabilities of any single interest group in society (interest groups being a “self-identified” set of individuals sharing an interest in the pursuit of a common norm; Uphoff, 1992: 5). Unable to trust one another, interest groups turn to third parties to monitor and enforce formal rules in society (Ostrom, 1990: 41-2). As Knight argues,

²⁸Unless they have something the head-enders need; ie. labour, capital, other valuable resources; (Ostrom, 1995: 139-40).

The logic of informal institutionalization is to constrain the actions of others through our own commitments. The logic of formal institutionalization is to constrain the actions of others through the actions of a third party' (1992: 188).

Enter the heroic sanctioner. An important assumption here is that heroes possess physical and/or administrative qualities that enable them to assume the costs of high-cost enforcement. Given their monopoly on administrative resources, and on the use of force, nation-states are often well-suited to meet the demands of heroic sanctioning.²⁹ In particular, legislatures, judiciaries, militaries and other agencies of control can use this monopoly to define, monitor and enforce formal institutional arrangements (Ostrom, 1990: 41; North, 1990: Chapter 7).

Heroes are aided in their cause by the "moral support" of those who feel they have an interest in an activity which the sanctioner is trying to encourage or discourage (Coleman, 1990: 283). Moral support enables heroic sanctioners to overcome what Coleman refers to as the "second order public good problem" of social sanctioning (1990: 283). This simply refers to the challenge of inducing heroic sanctioners to bear the costs of enforcing norms which create particular benefits.³⁰ An essential requirement here is that the sanctioner possess "a presumptive right to impose the sanction," (Coleman, 1990: 283). In other words, the second order public goods problem diminishes when sanctioners presume that what they are doing is "right."

As Knight (1992: 181-92) and North (1990: 49) argue, however, norms about "what is right" vary widely within any social setting, producing contradictory preferences about the normative direction of formal rules. To the extent that nation-states monitor and enforce formal rules, formalisation entails a process in which informal rules are transformed into formal rules, backed by the coercive power of the nation-state. It is the struggle over what constitutes a formal rule, Knight (1992: 188) argues, that represents "the basic politics of state decision making."

A Theory of Institutional Conflict

A danger with both incremental and heroic sanctioning is that individuals may be encouraged to pursue norms which are not in their interest. In other words, they may be forced to pursue norms from which they do not receive benefits. Although the

²⁹See Ostrom, 1990: 41; Swift, 1994: 154; 1993: 7-9; Martin, 1995: 76-7; Kurien, 1992: 222; Oakerson, 1988: 153-4; North, 1990: Chapter 7; 120-21; Young, 1995: 31; Feeny, 1988: 168-70; Vivian, 1992: 61; Mearns, 1996a: 125-6; Knight, 1992: 171-92.

³⁰"First order" public good problems refer to the challenge of inducing individuals to follow a norm (Coleman, 1990: 280-4).

very existence of a sanction suggests that individuals do not identify fully with the norm, the danger here is that social institutions actually encourage individuals to undermine their own interests. This can happen in two ways. First, incremental sanctions may perpetuate “destructive fads,” norms which appear attractive, but actually contradict the interests of those who follow them (Ridley, 1996: 182-3; Coleman, 1990: 198-201). Second, heroic sanctions may enforce formal rules from which adherents receive little or no tangible benefits, and from which they have no formal means of escape (Bates, 1988: 390-95; North, 1995: 21).

A fundamental concern here is that formal rules generate situations in which positive externalities go to those who do not bear the costs, and negative externalities go to those who do not enjoy the benefits. A secondary concern is that formal rules and sanctions “trap” individuals within harmful social arrangements. As noted earlier, exchange relationships become power relationships when one party contributes resources to an activity in which he or she has no particular interest. Social relationships lack “internal morality,” Coleman (1990: 172-3) argues, when the institutions that structure the relationship prevent members from leaving the relationship. An example of an immoral formal institution, then, would be a constitution that fails to provide rules for secession.

Conflicts arise when formal rules encourage individuals to act in ways that contradict their expectations and preferences (Knight, 1992: 185). **Implicit conflict** appears when individuals seek to leave an immoral relationship, but immoral institutions and/or immoral actors (i.e. individuals who ignore “moral” institutions) prevent them from doing so. **Explicit conflict** (or overt resistance) occurs when individuals attempt to change this situation .

Individuals can “resist” immoral power relationships in one of two ways. First, they can withhold the right to control the actions and resources they contribute to the relationship (Coleman, 1990: 172-3; Kabeer, 1994: 127-28; Kerkvliet, 1990: 260-8). Examples here would include strikes or civil disobedience (Scott, 1985). As Kabeer (1994: 127-30) and Kerkvliet (1990: 260) observe, however, an ability to withhold resources requires access to resources and allies outside of an immoral relationship. An inability to reach these vital resources greatly reduces the prospects for effective resistance. In households where men monopolise assets and relationships with external actors, for instance, women are often forced to “cooperate” simply in order to survive (Kabeer, 1994: 128).

A second way in which individuals can resist immoral relationships, then, is to seek the aide of “moral allies.” Moral alliances are important because they provide a means through which individuals can leave immoral relationships (Hirschman, 1978). As Coleman argues, target actors can disregard a social rule if they have

“sufficient mobility to escape the effect of sanctions,” (1990: 286). Individuals can challenge undesirable norms and institutions by collaborating “with others outside who are not norm holders,” (Coleman, 1990: 286). Hart’s analysis of Malaysian households, for instance, suggests that women were able to challenge male authority, in both the workplace and the household, by joining forces with other women in female agricultural work gangs³¹ (cited in Kabeer, 1994: 121).

Moral allies also aide their beneficiaries by reducing the costs of resisting the status quo. One cost is the cost of encouraging individuals to pursue collective goals (Knight, 1992: 196). In so far as individuals seek to satisfy their own interests, they may be disinclined to participate in a collective effort if they believe that the costs of participating will outweigh the ultimate reward (Olson, 1965: 27-33; Ostrom, 1990: 44-45; Coleman, 1990: 53). “Political entrepreneurs” (those who assume the costs of motivating collective efforts), then, must use positive and negative sanctions to induce members to pursue collective interests (Olson, 1965: 27-33; Ostrom, 1990: 40; Mearns, 1996a: 125). One powerful inducement is the nature of the challenge, which entails a “normative assertion that the present situation is either inefficient, unfair, or both,” (White and Runge, 1995: 1685). To the extent that individuals identify with a collective challenge, they possess strong incentives to ensure its achievement.

A second cost relates to the importance of obtaining and transmitting information about the collective task at hand (White and Runge, 1995: 1690; Mearns, 1996a: 125). Included here are the costs of searching out opportunities, monitoring collective activities, negotiating with potential adversaries, and in general, obtaining information about “what needs to be done.” Finally, moral allies can help their beneficiaries by assuming or reducing the political costs of challenging the status quo (Khan, 1995). Effectiveness here depends upon the moral ally’s capacity to shield its beneficiary from retaliation from those who would seek to maintain the status quo, and on its ability to bargain on behalf of the beneficiary. Along with organisational and informational costs, bargaining costs include the costs of engaging and challenging those who possess the authority to change the status quo (Knight, 1992: 181; Mearns, 1996a: 125; Stewart, 1996: 18).

Individuals will invest in these “social,” and “political resources” when they perceive that their interests will best be served by making the investment (Kabeer, citing Guyer, 1994: 121; Berry, 1989: 41-51; Coleman, 1990: 286-8). Three factors can constrain their capacity to make this investment, however. First, individuals may lack the time or resources to invest in social relationships. As Kabeer (1994: 127-30) and Berry (1989: 49-51) argue, deepening economic poverty can in fact perpetuate

³¹Whose members, presumably, did not share the norms of their patriarchal superiors.

social withdrawal, depleting any and all of the social resources that individuals have at their disposal. Second, investors may lack access to or knowledge about the groups from which they would seek support (which can create principal-agent dilemmas). Finally, assuming that social investments entail economic and political costs, social membership constitutes a significant public goods dilemma. As Berry (1989: 48) argues, “if resources are fixed, increased membership implies less for each and may reduce the fortunes of all.”

Two elements underlie this assertion. First, group expansion reduces the payoff for individual investors, creating incentives to free ride (Olson, 1965: 16). Second, as Berry argues,

'Investment in social relations as channels of access may divert surplus from investment in directly productive activities, and direct the management of production towards fostering loyalty rather than maximising physical output' (1989: 49).

The dilemma here is twofold. First, investment in social relations can deplete other resources. Second, the fruits of these investments are inherently difficult to capture (Coleman, citing Loury, 1990: 315). Therefore, individuals have less incentive to invest in relationships that are unlikely to produce private benefits.

A final concern is that the groups in which one invests may not pursue the interests of their investors. “Good groups,” Stewart asserts, “raise efficiency while generating a satisfactory (interpreted as equitable) distribution of the benefits, or claims function that succeed in improving in improving the position of low-income groups,” (1996: 15, parentheses in original). “Bad groups,” in contrast, achieve few benefits or claims, and those which they do obtain generally go to “the richer elements of the group,” (1996: 15). As she argues,

'The effectiveness of a claims group depends on the bargaining power they acquire through forming a group. This is a matter of the objective circumstances (e.g. whether there is much unemployed labour in the case of workers' organizations), and of their ability to use their organization effectively (the discipline of the group and how confrontational they are prepared to be)' (1996: 18; parentheses in original).

Once again, this raises the importance of the nation-state. The state occupies an unusual position here in the sense that it can serve as both ally and adjudicator (Knight, 1992: 192-4). Alliances form in two different ways. Interest-based alliances form when states believe that they have an interest in the relationship.³² Constitutional

³²Knight (1992: 190) offers a useful way of differentiating interests of the state. “Direct interests,” he argues relate to the benefits that public officials receive from undertaking an intervention. Examples

alliances, by contrast, arise from a formal obligation (backed by a formal rule) to assist or protect a particular group in society (thereby creating rights).³³

As noted earlier, states can reduce enforcement costs by monitoring and/or enforcing formal rules (North, 1990: Chapter 7; Knight, 1992: 190). Given their monopoly on financial and human resources in many societies, states can also subsidise the organisational, informational and bargaining costs associated with challenging the status quo (Ostrom, 1990: Chapter 4). Acting in this capacity, they can provide an important forum in which competing interest groups can negotiate formal and informal institutional change (Ostrom, 1990: Chapter 4; Knight, 1992: 192-94). Of course, gaining access to the decision-making process is itself a significant transaction cost, and is explored in greater detail below.

V. Common Pool Resource Theory

The importance of conceptualising rules, norms and sanctions in this way is that it provides a distinction between cooperation (trust being a highly effective form of cooperation) and conflict. The clarification is significant because it provides a means of analysing and re-conceptualising the central propositions that underlie common pool resource (CPR) theory.³⁴

A central concern of CPR theory is with the ways in which open access regimes are transformed into common property regimes. The principal factor which commonly prevents individuals from making this transition is the classic tragedy of the commons scenario: how self-interested individuals are to restrict their use of a resource (which is depletable) from which they are not easily excluded.³⁵ Two

here would be salaries for police officers, bribes, etc. "Indirect interests" relate to the notion that the state has an interest in perpetuating its own existence. Resonating strongly with the neo-marxist perspective (see Evans et al., 1985), Knight argues that the state has an indirect interest in maintaining economic stability to ensure a reliable supply of economic rent for itself, and for those on whom it depends to remain in power.

³³Of course, this raises the challenge of differentiating between state and societal interests, a challenge that has plagued many a political theorist (Evans et al, 1985; Fox, 1996; Evans, 1996a; 1996b). For the sake of theoretical clarity, an early assumption will be that the state has an interest in a relationship if it is under no constitutional obligation to enter one, but does so nevertheless. The challenge of determining what this interest is will depend upon the empirical nature of the intervention.

³⁴See E.Ostrom (1996; 1995; 1990); Keohane and Ostrom (1995); E.Ostrom et al (1993; 1994); Blomquist (1994); Blomquist et al (1994); Agrawal (1994); Lam (1996); Tang (1994); Libecap (1995); Blaikie and Brookfield (1987); Martin (1995); Mitchell (1995); Opschoor and van der Straaten (1992); Swift (1994; 1993); Wade (1988a; 1988b; 1992; 1995); White and Runge (1995); Mearns (1996a; 1996b; 1996c); Scoones (1996); Bromley (1992); Runge (1992); Uphoff (1992).

³⁵Ostrom, 1990: 2-7; Ostrom et al, 1994: 7; Keohane and Ostrom, 1995: 13; Ostrom et al, 1993: 89.

assumptions underlie this dilemma. First, rational individuals seek to maximise their use of a resource because the benefits they believe they receive from doing so exceed the marginal benefits of refraining in isolation. Second, without credible assurance that voluntaristic behaviour will be reciprocated, individuals have strong incentives to defect from collective arrangements. Fear of being taken for a “sucker,” then, discourages collective action, producing a situation in which everyone seeks to maximise personal benefit at the expense of others (Ostrom, 1990: 2-7; 43-45; Wade, 1988b: 490; Hardin, 1968).

CPR theory suggests that individuals can overcome the assurance dilemma, and cooperate to protect a common pool resource, by designing and following rules that most closely suit the environmental and socio-economic needs of the CPR (Ostrom, 1990; Ostrom et al, 1993; 1994; Keohane and Ostrom, 1995; Wade, 1988a; 1988b; 1992; Mearns, 1996a; 1996b; 1996c; Swift, 1994; Devereux, 1996). Successful regimes endure, CPR theory suggests, when the benefits derived from the institutional regime (i.e. the rules, sanctions and means of enforcement) are confined to “a smallish and stable community,” (Stewart, 1996: 16; Ostrom, 1990: Chapter 3).

One necessary condition is “credible commitment,” the expectation that pro-social behaviour will be reciprocated (Ostrom, 1990: 42-45; White and Runge, 1995: 1692-93; Pearce and Warford, 1993: 246-47; Wade, 1988b: 489-90). Spatial boundaries and temporal restrictions enhance credibility and assurance by stipulating terms of exclusion, terms which are (ideally) decided, monitored and enforced by those who use the resource (Ostrom, 1990: 90-6; Wade, 1992: 209-11; Tang, 1994; Agrawal, 1994). A classic example here is an irrigation scheme in which farmers monitor and enforce the activities of their own counterparts. Because they are literally “next in line,” the temporary inspectors have strong incentives to undertake their role effectively (Ostrom, 1990: 95-6).

Incremental sanctions and “mutual monitoring” (Ostrom, 1990: 45) reduce the costs of generating and transmitting information about rules, preferences and the state of the CPR (Ostrom, 1990: 45-6; Chapter 3; Runge, 1992: 33; Tang, 1994; Agrawal, 1994). In so doing, they narrow the gap between the “rules in use” and the “time and place” needs of the CPR (Ostrom et al, citing von Hayek, 1993: 50). Included here are factors such as local environmental conditions, local production activities, pre-existing institutional arrangements, and levels of demand for a particular resource (Lam, 1996: 1041; E.Ostrom et al, 1993: 90).

Effective communication regarding rules and reputations enable individuals to learn from positive and negative experiences, developing rules when necessary and, when possible, extending trust (Ostrom, 1990: 21; Chapters 3 and 4; 190-91; White and Runge, 1995: 1691). In so far as the nation state (and the various departments

within its authority) represents a source of formal institutions, CPR theory suggests that individuals can transcend tragedy of the commons scenarios by exploiting informal institutions that are already “on the ground,” (Ostrom, 1990: 190-91; Runge, 1992: 18; Uphoff, 1992: 4-5; White and Runge, 1995: 1693; Mearns, 1996a: 125). What this suggests is that local institutional arrangements are themselves forms of social capital, on which individuals can build broader and more complex ways of accommodating preferences and settling disputes (Ostrom, 1990: 190-91; White and Runge, 1995: 1693; Mearns, 1996b; 1996c).

Implicit here is an important distinction between “internal” and “external” institutional dynamics (Ostrom, 1990: 21; Mearns, 1996a: 125-26). Internal dynamics suggest that resource interests are direct, and networks of social interaction are local, or “face-to-face,” (Uphoff, 1992: 4; Oakerson, 1988: 146; Ostrom, 1990: 138). External dynamics, by contrast, imply that resource interests and social relationships are relatively indirect, operating beyond the local level. Overwhelmingly, CPR theory suggests, the health and longevity of any CPR depends upon the degree to which interdependent individuals can recognise their interdependence, and maintain internal institutions (Ostrom, 1990; Wade, 1988a; 1992; Swift, 1994; Mearns, 1996a; 1996b; 1996c; Tang, 1994; Agrawal, 1994; Engberg-Pedersen, 1995; Lund, 1993; Vedeld, 1994; White and Runge, 1995).

As noted earlier, moral allies enable their beneficiaries to escape immoral relationships by assuming organisational, informational and/or political costs of initiating institutional change. In so far as they lower the costs of creating and maintaining internal autonomy, moral allies are important to the health of the CPR. Examples here would include local voluntary organisations (Ostrom, 1990: 137-8), external non-governmental organisations (White and Runge, 1995: 1690) and agencies of the state (Ostrom, 1990: Chapter 4; Wade, 1992: 224-5). Ostrom’s analysis of water sharing arrangements in California, for instance, suggests that public agencies provided a low-cost source of information (about the CPR), and a forum for communication and conflict mediation (1990: 138).

Beyond providing information and mediating localised disputes, however, central state agencies play a modest role in CPR theory. To the extent that they lower the costs of maintaining or supporting internal institutions, external state authorities can contribute to the well-being of a CPR. In terms of their capacity to design, monitor and enforce formal institutions, however, external state agencies are potentially disruptive (Ostrom, 1990: 157-82; White and Runge, 1995: 1693; Mearns, 1996a: 126; 1996b). The argument here is that central state officials lack the understanding and wherewithal to regulate behaviour “across myriad micro situations,” (Wade, 1988: 490; also see Ostrom, 1990: 157-82; Ostrom et al, 1993:

50-90; Lam, 1996: 1041). For this reason, CPR theory suggests, internal institutional regimes operate most effectively when they are left on their own .

A Critique of CPR Theory

The strength of CPR theory lies in its ability to recognise and conceptualise the role of local actors and institutions. Challenging the deterministic notion that individuals always “defect” from the commons, CPR theory suggests that given the right social institutions, individuals will exercise restraint. In so doing, however, it raises a number of problematic issues relating to power, autonomy and what constitutes sustainable cooperation.

CPR theory rests on the assumption that individuals can interpret and respond to an objectively-defined set of rules (i.e. individuals are rational). As Toye (1995: 59-64) argues, however, it is not entirely reasonable to assume that individuals will interpret, or follow, rules in a uniform fashion. Assuming bounded rationality, individuals (including those who enforce the rules) may not share a common understanding of what constitutes acceptable behaviour (White and Runge, 1995: 1693). Factor in assumptions of uncertainty,³⁶ and the notion that individuals can know and/or predict the effects of their actions becomes highly problematic (Robin Mearns, personal discussions, 11 October, 1996). Common property regimes appear to work well when the relationship between actions and outcomes is relatively direct. Irrigation networks³⁷ and community woodlots³⁸ are classic examples. How CPRs work when the resource serves many, potentially conflicting, interests (not necessarily ones living in the area), however, is far less certain.

Assumptions of bounded rationality, then, raise the issue of opportunism. As Toye (1995) argues, some parties follow rules better than others. And, more important, some are better able to choose the rules they will follow (North, 1995: 23; Ostrom et al, 1993: 326; Agrawal, 1994: 268; Knight, 1992: 177-96). Assuming that skills and capabilities are distributed asymmetrically, and that monitoring and enforcement are costly, the notion that individuals have the time and resources to govern their own rules becomes problematic, suggesting a strong need for representative enforcement. Only when the activities of the enforcer are absolutely transparent, however, can a CPR work efficiently. When guardians possess specialist

³⁶See, for instance, the literature on ecological disequilibrium; Scoones (1994).

³⁷See Ostrom (1990); Lam (1996).

³⁸See Tang (1994); Agrawal (1994).

information and knowledge about their activities and the activities of resource users, opportunities for defection arise (Bates, 1988: 394-98).

A second issue relates to the costs of achieving and maintaining internal autonomy. Explanations for the emergence and evolution of CPR arrangements suggest that individuals will negotiate new institutional arrangements when the (perceived) benefits of change exceed the costs of maintaining the status quo (Ostrom, 1990: Chapter 4; 193-212; also see Ostrom et al, 1993: 46-50). Central here is the notion that negotiating, implementing, using and re-negotiating rules of conduct entail particular costs which individuals can ascertain in a rational manner. Institutional change is more likely, Ostrom (1990: 211) asserts, when individuals share the understanding that failure to change will affect all individuals equally and negatively (also see White and Runge, 1995: 1693; Libecap, 1995: 188-89). Unless the costs of inaction are readily apparent, however, individuals tend to discount their personal stake in the equation, making this type of interdependence highly elusive (Ostrom, 1990: 208-9; Pearce and Warford, 1993: 211).

A central argument here is that CPR theory underpredicts the costs of initiating and sustaining new and enduring institutional arrangements. Population pressures, poor governance and market expansion can all place significant demands on the resource claims of “smallish and stable” communities (Swift, 1993).³⁹ CPR theories appear to understate the costs of excluding or neutralising the effects of external agents, particularly ones who migrate into the resource area or use its resources from afar.⁴⁰

As Oran Young (1995: 40) suggests, the principles on which CPRs appear to thrive may be more empirical than the theorists suggest. CPRs, he argues, are initiated and maintained by political processes, which may be highly contextual, and inappropriate for different socio-cultural situations (Young, 1995: 41). Ostrom’s theory of institutional change, for instance, extrapolates theoretical propositions from a highly sophisticated process, involving district, state and supreme courts, and constitutional rights that guarantee the freedom of speech, association, litigation and access to information (1990: Chapter 4). Although it concedes that “rules are nested in another set of rules that define how the first set of rules can be changed,” Ostrom’s analysis (1990: 51) underpredicts the costs of changing institutions in less accommodating socio-political conditions. As Fox argues, “social capital cannot be

³⁹Although these variables are certainly not inevitably deterministic (see Fairhead and Leach, 1996; Leach and Mearns, 1996; Forsyth, 1995).

⁴⁰Examples of “absentee” resource users here would include foreign markets and urban centres; David Satterthwaite, “Environmental Hazards in Third World Cities, and Options for their Regulation,” paper presented at the *Environmental Transformations in Developing Countries* Conference. 16 October, 1996, Royal Geographical Society, London.

assumed to be continuously distributed, especially where freedom of association is not guaranteed,” (1996: 1091).

Indeed, enduring CPRs appear to depend upon powerful moral allies, who are willing and able to assume the costs of maintaining or changing the status quo. One important ally is the state. Assuming that internal and external pressures undermine the autonomy of self-governing CPRs, “the right to exclude,” (Toye, 1995: 59) and the state, which enforces this right, become vital (Vivian, 1992: 61-2). A central issue, then, and one that CPR theories often neglect, is the way in which local institutional arrangements achieve and maintain autonomy (Swift, 1994; Mearns, 1996a; Oakerson, 1988). Evidence seems to suggest that CPRs can survive through periods of “contestation,” although their survival either depends upon active state intervention or international pressure (which induces state intervention) (Engberg-Pedersen, 1995; Lund, 1993; Vedeld, 1994).

Thriving CPRs also depend upon the existence of non-state moral allies, particularly ones with indirect interests in the CPR, and indirect relationships with its members. As Ostrom (1990: 26) clarifies early on, her primary focus is on individuals who depend “heavily” on the CPR for livelihood, intentionally exogenising the role of indirect interests. Indirect interests receive little scrutiny in the CPR literature, particularly with respect to the ways in which they reduce or assume the costs of maintaining internal institutional autonomy.

A final criticism relates to the way in which conflict and cooperation are conceptualised in CPR theory. At issue here is the degree to which trust and cooperation can be generalised from selective networks of engagement into broader categories of human interaction (Humphrey and Schmitz, 1996; Putnam, citing Granovetter, 1993: 172). CPR theories suggest that the benefits derived from mutual monitoring and incremental sanctions will be distributed evenly. Assuming social asymmetry, however, this proposition raises a number of problematic issues. First, it implies an assumption of abundance (i.e. that there are enough benefits to go around). Second, the unequal power relationship raises a significant principal-agent dilemma. Assuming that those who decide the distribution of a particular good represent the agent, the principals have few means of obtaining the good or obtaining information about the conditions under which the good is distributed (Bates, 1988; 1995). Finally, empirical evidence appears to challenge the notion that when given the chance, influential groups will not maximise rent at the expense of those less fortunate (Bates, 1989; Ostrom, 1990: Chapter 5; Bromley, 1992; Mearns, 1996b; Devereux, 1996).

Cooperation, CPR theory implies, simply suggests that everyone follows the rules. Conceptualised in this way, CPR theory underpredicts the existence of implicit conflict, and the potential for explicit conflict. In so far as uneven distribution creates

losers, it implies the existence of implicit (if not explicit) conflict, a condition under which individuals seek to leave a relationship, but are prevented from doing so. The arrangements that Ostrom calls “successful CPRs” may lack explicit conflict, but this certainly does not suggest they are conflict-free.

VI. Final Propositions and Conclusions

The foregoing discussion suggests two broad propositions about the conditions under which common property regimes sustain collective resources, and the livelihoods of those who use them. First, CPR theory suggests that rules should be negotiated, monitored and enforced at the local level. In short, regulatory authority should go to individuals within the CPR community (i.e. those with direct resource interests). As the foregoing critique suggests, however, self-government does not necessarily mitigate problems associated with powerful rent seekers, external threats and institutional conflict. Although CPR theories suggest a way in which self-governing regimes can reduce the gap between formal rules and the “time and place” needs of the CPR, they fail to explain how commoners can overcome the costs of addressing all three of these problems. A second proposition, then, is that enduring and cooperative CPRs require active assistance from external moral allies.

In so far as it specifies the nature of cooperation and conflict, the foregoing discussion also provides a broad framework for the study of institutions and sustainable livelihoods. As the following table indicates, sustainable and unsustainable resource management can be differentiated by rates of rent dissipation (i.e. the rate at which individuals extract benefits from the resource base). Unsustainable conflict and cooperation both imply that rents exceed the natural regenerative and/or assimilative capacity of the resource base, creating environmental costs for all.

Table 2: Models of Unsustainable Cooperation and Conflict

Model:	Rent dissipation:	Distribution of benefits:
Cooperation	High	Wide
Conflict	High	Narrow

By contrast, sustainable conflict and cooperation imply that levels of rent dissipation remain low, although the distribution of benefits may vary.

Table 3: Models of Sustainable Cooperation and Conflict

Model:	Levels of Rent Dissipation:	Distribution of Benefits:
Cooperation	Low	Wide
Conflict	Low	Narrow

An important point here is that following the rules and maintaining a CPR are not necessarily synonymous. Rules encourage the pursuit of sustainable livelihoods only in so far as levels of rent dissipation remain low and distribution of benefits remains wide. When rules reinforce narrow distributional patterns, however, livelihoods can be profoundly unsustainable, irrespective of the physical state of the resource base.

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