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payback killing in Papua New Guinea

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## Abstract

We provide a simple model for considering the interaction between multiple legal regimes existing simultaneously within a single jurisdiction. We demonstrate that, even when the fundamental relationship between outputs of such regimes is to behave as substitutes for one another, the existence of negative externalities between the enforcement technologies can result in the withdrawal of enforcement efforts. We term this phenomenon *legal dissonance* – the situation in which legal regimes interact negatively in their production technologies. This reduction in aggregate enforcement efforts can result in high levels of crime and disorder within the pluralistic society. This model is then demonstrated in regard to the post-colonial state of Papua New Guinea where significant negative production externalities are present, enforcement levels are low, and levels of crime and disorder are high. Survey data is introduced to demonstrate that these outcomes are in part attributable to the co-existence of the customary legal regime providing for “payback killing” with the overlaid state regime criminalising the same. Disorder may be the outcome of too much law.

**Keywords:** Legal Pluralism, Enforcement Externalities, Payback Killings

**JEL:** O17, P48, K42, L51

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## 1. Introduction

It has long been established that order can exist without law (Ellickson 1994, 2001; McAdams and Rasmusen 2007). This can be the case on account of social norms providing private ordering of behaviour across a wide range of activities.<sup>3</sup> It can also be the case when private enforcement substitutes for public enforcement.<sup>4</sup> It has also been argued that public and private enforcement measures can complement one another, as when private litigants bring actions against those charged with public offenses.<sup>5</sup> Most of this literature seems to consider the choice between institutions as an alternative one. When states are weak, then bargaining and private enforcement may be the preferred institution.<sup>6</sup> If states are functional,

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<sup>3</sup> Ellickson (1998) has argued that order is often the result of social norms alone. Cooter (1997a; 1997b; 1998; 2000) argues that law often evolves out of social norms, as a response to the inefficiency or ineffectiveness of private orderings. Much of the commons property resource management literature also deals with the means by which norms generate efficient orders. (Ostrom 1990)

<sup>4</sup> Friedman (1984) argues that legal systems can interact with private enforcement to produce optimal outcomes, and Friedman (1979) demonstrates that private enforcement of legal systems resulted in similar outcomes to ones currently observed. Libecap (1989) and especially Barzel (1989) have demonstrated in a wide range of circumstances how private enforcement mechanisms may become important parts of the problem of generating property rights.

<sup>5</sup> In these circumstances the public and private enforcement efforts supplement one another in producing the overall sanction on the accused, and hence jointly determine the deterrence level, although they are usually working in the same direction. (Ben-Shahar and Harel, 1995; McAfee *et al* 2008; Briggs *et al* 1996; and Coffee 1986)

<sup>6</sup> Bargaining over the resolution of actionable wrongs is often viewed as a reasonable substitute for the more standard forms of monitoring and enforcement. (Fenn and Veljanovski 1998). Private enforcement institutions may also take the form of bargaining with corrupt officials or groups. (Garoupa and Klerman 2010; Garoupa and Gomez-Pomar 2004; Shavell 1993)

then the consensus appears to be that the monopolisation of force avoids the problem of the duplication of efforts realised under private enforcement approaches.<sup>7</sup> (Landes and Posner 1975) Much of this literature fits easily within the well-known framework regarding the evolution of institutional efficiency, in which inferior institutions are replaced by superior ones as circumstances change and norms evolve.<sup>8</sup>

There is a growing literature, however, recognising that there can also be an interesting transition phase regarding institutional outcomes. In this phase, the determinative factor can be the contemporaneous existence of multiple legal systems within a single jurisdiction, and the state of order generated within societies subject to such. Many times this *legal pluralism* is an outcome in those states which have been subjected to a series of distinct legal systems: traditional, regional, colonial, national. When one regime displaces another, some residual of the pre-existing regime persists, and then social outcomes would potentially be the result of the interaction between the two regimes.<sup>9</sup>

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<sup>7</sup> See also Segal and Whinston (2006); Garoupa (1997); Polinsky (1980).

<sup>8</sup> The *locus classicus* being Demsetz (1967) and the formalisation of that argument occurring in Hirschleifer (1982).

<sup>9</sup> Many analysts have looked at how traditional regimes can persist in the face of additional overlaid legal regimes. Bicchieri (2006), Greif (2006), Aoki (2001), and Basu (2000) have attempted to provide explanations for the persistence of norms that conflict with the state law, suggesting that the state law will not be recognised where it lacks legitimacy by the general population who share differing beliefs that they continue to hold despite changes in the state laws. This is in a similar vein to Berkowitz *et al* (2003). Knight (1992) suggests that for a new state law to displace conflicting customary laws, expectations among the population must change through expressive information and the use of state sanctions. He suggests that without a proper enforcement mechanism there is unlikely to be a move from the old customary equilibrium to a new state based equilibrium. Posner and Rasmusen (1999:382) reach a similar conclusion to Bentham (2011) suggesting that ‘bad norms’ can be changed by the state by ‘diminishing the benefits of compliance with such norms by creating effective legal

Analysts have recently been attempting to conceive of how the interaction of multiple systems might produce outcomes. Perhaps the most sophisticated conceptualisation of the interaction of multiple regimes is the analysis of Zasu (2007) drawing on the previous work of Posner and Rasmusen (1999). Zasu considers the standard scenario of the interaction of state and non-state (or traditional) control regimes. His analysis demonstrates that non-state sanctions can act as both complements and substitutes to state sanctions. As state law sanctions increase they can crowd out non-state sanctions, which become mere complements in controlling behaviour deemed to be wrongful. Zasu also considers the issue of the social optimality of legal pluralism, and demonstrates that the socially optimality of this crowding out process depends on the relative costs of non-state and state enforcement mechanisms. He argues that as a society becomes less socially connected the relative costs of non-state law enforcement rise, and so there is an optimal substitution toward state enforcement mechanisms. In sum, this general view supports the idea that dual legal regimes act as substitutes for one another in deterring commonly perceived wrongs, and that there is an

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remedies'. Kahan (2000: 607) provides a basic model to analyse state efforts to change what he calls 'sticky norms' and suggests that 'gentle nudges' can be more effective than 'hard shoves' as agents of the state.

Dharmapala and McAdams (2003) and Geisinger (2002) also highlight the 'expressive' function of state law and suggest the state is able to create and perpetuate norms through its ability to signal good and bad behaviour and change internalised beliefs. A recent contribution to the literature is the work of Aldashev *et al* (2012a; 2012b) that explicitly analyses legal pluralism by applying a bargaining in the shadow of the law model to customary law. Their work suggests that the informal customary law should converge to the formal law over time with greater access to state courts. All of these contributions focus on the existence of this transition phase of legal pluralism, but without focusing on the outcome of having more than one regime in place at one time.

economic tendency for the two interacting systems to move toward an equilibrium that supports the socially optimal mechanism for deterring wrongful behaviour in that society.<sup>10</sup>

While Zasu (2007) offers a compelling explanation for how legal structure might evolve between systems in many developed societies, his model is unable to explain the current circumstances in many post-colonial societies that were subject to a legal transplant.

Described by the Comaroffs (2006: 6) as a ‘Hobbesian nightmare’, many of these societies have high levels of social connectedness, low levels of state law enforcement, and high rates of crime and disorder. Based on cross-country empirical analysis, Berkowitz *et al* (2003) have labelled this phenomenon – of disorder within legal pluralism -the *transplant effect*.

These empirical observations and stylised facts are problematic for those models that consider legal systems as substitutes for deterring wrongful behaviour. In Zasu’s model<sup>11</sup> we would expect to see high levels of non-state enforcement generated in response to low levels of state enforcement, or alternatively an increase in the state’s enforcement effort, and (in any event) the aggregate outcome of a socially optimal level of crime. The phenomenon of disorder widely prevailing within pluralistic legal societies has yet to be explained.

This is our objective in this paper – we present a theory of legal pluralism that provides an explanation for levels of enforcement effort and resulting crime that is clearly less than first-best. In doing so, we develop a model that provides for the fundamental substitutability

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<sup>10</sup> Examples of this approach would include Glaeser *et al* (2006) and Buonanno *et al* (2009) who find empirical evidence of the importance of non-state institutions in controlling criminal behaviour. Posner (1997), and McMillan and Woodruff (2000) provide evidence that informal norms act as substitutes for commercial law. Shavell (2002) sees non-state and state legal regimes primarily as complements, and has analysed the optimal mix of such institutions. He concludes that the state legal order’s advantages are its ability to more finely grade wrong behaviour, together with its adaptability, and ability to impose higher sanctions.

<sup>11</sup> As stated by Black (2010: 6) as well, who suggests that state ‘[l]aw varies inversely with other social control’.

between the outputs of different legal regimes, hence preserving many of the insights of pre-existing work; however, we add an emphasis on the role of externalities within the production technologies that enforce the legal regimes. Our argument is that there may be negative impacts from coterminous enforcement mechanisms applied coincidentally, even though their outputs might fundamentally serve as substitutes for one another.<sup>12</sup> In this fashion it is possible for the legal systems to interact negatively with one another in their implementation – a phenomenon we label *legal dissonance* – even though their outputs interact constructively in the manner outlined by Zasu.<sup>13</sup>

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<sup>12</sup> The nearest work to ours concerns the problem of overlapping jurisdictions, and the negative interaction effects resulting from such. (see Hutchinson and Kennedy 2008, Langpap and Shimshack 2010, Silva and Caplan 1997 in the context of pollution enforcement; or, Kovacic 2001 in the context of antitrust enforcement externalities). In this literature, it is sometimes recognised that externalities can exist in the context of overlapping jurisdictions but the usual explanation provided lies in conflicting objectives between regulators, rather than common objectives and conflicting technologies. We believe that our analysis is the first to demonstrate the precise nature of such externalities, and why they might exist in the specific context of institutional transition.

<sup>13</sup> While it is true that the crowding-out literature of Akerlof and Dickens (1982) and Frey and Jegen (2001) could provide an explanation for such an outcome, via internal motivations, we show that this is likely to be a minor factor in the case of a transplant society where production externalities can be tangible and significant. Furthermore, while Carbonara *et al* (2012) provide an explanation for counterproductive legal interventions where the state chooses to punish activities that are considered socially acceptable through *protest norms*, it does not explain a situation where state and non-state sanctions are aimed at punishing the same serious crimes, for instance, murder, rape and robbery, which is the focus of this work. It should also be noted that the analysis below applies to the intervening decades, or perhaps centuries, before the convergence between state and non-state legal institutions is achieved, as predicted by Aldashev *et al* (2012).

This is a less-explored domain, but one that is very important for understanding how and why transplant economies face so many difficulties in their transition. (Arnott and Stiglitz 1991)<sup>14</sup> Papua New Guinea is a case in point, where the production of enforcement effort under customary regimes conflicts strongly with the transplant regime from the west. The state regime operates under presumptions of a monopoly of force and a trained police, while the customary regimes emphasise kinship relations and the right to retribution. State efforts at enforcement conflict straightforwardly with non-state efforts, since the efforts under the customary legal system are often considered crimes under the state system and the state system is attempting to supply efforts through agents who are constrained by kinship relations. These conflicts within the production system derive from legal dissonance – general incompatibility and friction between the overlapping systems – and result in the withdrawal of efforts and the generation of a far from first-best aggregate outcome.

Our analysis proceeds as follows: In section 2 we provide a very simple model of interacting legal regimes and their enforcement technology, in which the manner of interaction demonstrates basic substitutability between systems. Then we provide an additional dimension to this basic model, in which the enforcement technologies of the two systems provide negative externalities to one another. This is an example of a phenomenon that we label *legal dissonance*: the costs imposed due to the frictions generated by the simultaneous administration of overlapping regimes. The outcome of such dissonance will be reduced levels of effort by each of the regimes, and so a reduced aggregate enforcement level and

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<sup>14</sup>Few other authors have explored the specific issue of the social inefficiencies of interacting legal regimes. Kaplow and Shavell (2007) suggest that state sanctions combined with other sanctions can result in excessive punishment of wrongdoers while Posner and Rasmusen (1999:381) caution against the state interfering in bilateral sanctions or weakening the power of groups to enforce their norms, suggesting that ‘[s]ometimes just staying out of the way is the best policy’ as interference may hinder more effective forms of social control.



hence increased crime and disorder. In section 3, we relate this analysis to the case of a classic example of a legal transplant, Papua New Guinea, and the general state of lawlessness and disorder prevailing under its pluralistic system. There we examine the phenomenon of payback killing as a mechanism for social control, and document how the co-existence of two legal regimes (state and traditional) creates negative production externalities with regard to social control there. In section 4, we conclude.

## **2. Theory: A Simple Model of Legal Pluralism**

In this section we examine a simple model of interaction of legal regimes, and demonstrate how different equilibria might result from such interaction. In general we find support for the idea that social optima can result irrespective of the number or combination of regimes in place. Then we examine (in section 2.2) how the introduction of possible production externalities within this framework might alter this result, producing the phenomenon of *legal dissonance*, i.e. inefficiencies resulting from coterminous legal orders.

### **2.1 Modelling Legal Pluralism: The Components**

#### *2.1.1 The Regulated Acts or Wrongful Forms of Behaviour*

Consider a transplant society where two legal orders are present, the pre-existing customary legal order and the transplanted state legal order. We will assume that they both consider a particular act or form of behaviour as wrongful and sanction it for purposes described in more detail below. More interesting cases exist when the two regimes consider acts very differently, but our analysis here will focus on the simple mechanics of enforcement when

two legal regimes are dealing with an act that both perceive to be wrongful: a common wrong.

We will also assume that the magnitude of the sanction ( $S$ ) applied to those detected engaging in such wrongful behaviour - under both legal orders –is *fixed* and equivalent (i.e.  $S_s=S_c=S$ ).<sup>15</sup> We adopt this assumption because we wish to focus on the strategic interaction between legal regimes, and our focus at this juncture will be on the choice of effort level of each regime in its expenditures on increased detection.

We wish to emphasise that, even when we assume equivalence in effect or impact, this does not necessarily imply that we are assuming equivalence in function or operation. While the magnitude of sanction will be assumed to be equivalent, the *type* of sanction used by each legal order may be very different. State sanctions usually consist of fines, imprisonment, and in some places executions, while customary sanctions include compensation demands, beatings, and retributive killings.<sup>16</sup>

### 2.1.2 *The Enforcement Technology*

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<sup>15</sup>While most authors acknowledge that informal sanctions are sticky, Zasu (2007) and Carbonara *et al* (2009) assume that the state can easily and costlessly vary its sanctions. The assumption that state sanctions are not fixed is unrealistic for two main reasons. First, most state legal orders contain the doctrine of proportionality which requires that crimes be sanctioned in a manner that maintains a fixed relation to the perceived level of wrongfulness of other sanctions applied to other wrongful acts. Second, as highlighted by Tamanaha (2008) many post-colonial states face considerable oversight and pressure from external agents (colonial power, other states, NGOs) which constrains the state from causing sanctions to vary too much from external norms.

<sup>16</sup>Within the human rights discourse customary sanctions are often considered either as inviolable rights of communities or as human rights violations themselves. Thus post-colonial states are seen to be constrained in their ability to vary sentences when an offender already faces an inalterable non-state sanction (see Kinley (2012)).

We turn now to the technological specification of the means by which detection of wrongful behaviour is achieved. Each legal system has the capacity for producing deterrence through expending efforts on *enforcement*: efforts at detection ( $p$ ) and on implementation of sanctions ( $S$ ). For simplicity, we will initially assume that the implementation of the sanction occurs costlessly once detection occurs, and so our focus will be on the expenditure of efforts on detection by each regime. The technology used within these production functions for enforcement is likely to differ quite a lot; for instance, the customary system's production function may rely heavily on kinship obligations and community networks, while the state system's production function may rely more on physical capital and disinterested enforcement. The important facet of these production functions for our purposes is that each one is capable of producing enforcement through efforts, and that they interact in some ways yet to be specified.

It is also assumed that increases in expenditures on enforcement of both legal orders increase the likelihood of detection and sanction monotonically but at a decreasing rates, enforcement costs of the respective legal orders ( $c_c, c_s$ ) are therefore concave functions of efforts at detection. All other factors that affect the relationship between enforcement activity and the probability of enforcement, such as productivity levels are fixed.<sup>17</sup> Later some of these assumptions are relaxed.

### 2.1.3 The Objective Function at Regime Level

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<sup>17</sup> That is:

$$\frac{\partial p(\cdot)}{\partial p_c} > 0, \frac{\partial^2 p(\cdot)}{\partial p_c^2} < 0, \frac{\partial p(\cdot)}{\partial p_s} > 0, \frac{\partial^2 p(\cdot)}{\partial p_s^2} < 0 \text{ and } \frac{\partial c_c}{\partial p_c} > 0, \frac{\partial^2 c_c}{\partial p_c^2} = 0, \frac{\partial c_s}{\partial p_s} > 0, \frac{\partial^2 c_s}{\partial p_s^2} = 0$$

It is assumed that the objective of criminal regulation at regime level is the optimal deterrence of wrongful acts.<sup>18</sup> Hence, any regime will try to optimise regarding  $D$ , the level of deterrence for a common wrong:

$$\text{Max } D = p(p_c, p_s) \cdot S(S_c, S_s) - c(p_c, p_s) \quad (1)$$

We will assume that the expenditure of effort by any regime is able to improve the level of detection ( $p_i$ ) through expenditures on enforcement efforts ( $e_i$ ) which cost ( $c_i$ ).<sup>19</sup> We will assume that detection is a monotonic function of effort, and so suppress effort in our modelling from this point forward, using achieved detection as a proxy for both inputs and outputs.<sup>20</sup>

The societally perceived level of detection (and hence the *effective level of detection*  $p$ ) is seen to be the joint outcome of the two systems' efforts interacting. This seems to be the common view on how legal systems most commonly interact, through ex post flows of information and knowledge between regimes. For example, it might be the case that one regime is able to narrow the set of suspects under suspicion by use of information provided by the other regime's processes of detection, and vice-versa. So, the phenomenon of

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<sup>18</sup>The deterrence model dates to Becker (1968), and presumes that an individual will commit a crime if the expected sanction is less than the expected benefit. Optimal deterrence is then defined as the level of cost effective investment in detection and sanctioning that removes incentives to engage in wrongful acts. Cooter (2000), Polinsky and Shavell (2000, 2001).

<sup>19</sup> Our specific assumption regarding the technology of enforcement is that detection is a function of enforcement effort, i.e.  $p(e)$ , and that costs are a function of enforcement effort, i.e.  $c(e)$ . We suppress the variable enforcement effort ( $e$ ) in this section, and replace with resulting levels of detection ( $p$ ). In section 5, below, we focus on the issue of enforcement technology externalities, and examine in greater detail the relationships between costs, detection and enforcement when both exist across the two regimes.

<sup>20</sup> We relax this assumption below in section 5 below, when we examine the manner in which production technology externalities may be impacted by characteristics of persons and communities.

detection is something that is known to be a joint outcome, and each legal system chooses its own level of effort in receipt of the information resulting after the efforts supplied by the other system.<sup>21</sup>

#### 2.1.4 The Socially Optimal Provision of Deterrence within a Unitised System.

For purposes of comparison, we will first consider the optimal provision of deterrence when the legal system is unitised. For a thought experiment, consider a type of wrongful behaviour that is controlled by two very different instruments, e.g. the control of speeding through expenditures on traffic cops,  $c$ , and through expenditures on speed cameras,  $s$ . If the two instruments are both controlled by a single entity, then the optimal expenditure on the two instruments under a *unitised regime* would be as follows:

$$\text{Max}_{p_c, p_s} D: p(p_c, p_s) \cdot S - c(p_c, p_s) \quad (2)$$

The first order conditions for expenditures on the two instruments are:

$$p_c^*: \frac{\partial c_c}{\partial p_c} = \frac{\partial p(p_c, p_s) \cdot S}{\partial p_c} \quad (3)$$

$$p_s^*: \frac{\partial c_s}{\partial p_s} = \frac{\partial p(p_c, p_s) \cdot S}{\partial p_s} \quad (4)$$

This is a simple system of two equations in two unknowns that implies that the rate of expenditure by the unitary authority on each instrument, so that it would equate each instrument's marginal cost to its marginal benefit. Note that the central planner would recognise the interaction of the two instruments, i.e. that more speed cameras would alter the benefits received from further investments in traffic cops, and internalise this effect in its decision making. The basic nature of the instruments as substitutes is recognised, and the

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<sup>21</sup>But, under *Nash conjectures*, each regime makes its own choice without intending to have any impact upon the other system's own choice of enforcement level.

unitary authority internalises this and any other interactions through its understanding of the aggregate enforcement technology.

### 2.1.5 The Interaction of Legal Systems in Choosing Enforcement

Now we will consider the same enforcement technology, but in the situation where each regime operates independently in choosing the level of expenditure on its one instrument. Using the very simple framework set out above, we will examine how the choices of each system will be made, and how they will interact with one another.

We now consider each instrument above to be under the control of a distinct legal order – the State System (s) and the Customary System (c). Each legal order's detection level is set to optimise the overall level of deterrence achieved (from the perspective of the potential wrongdoer) given its own cost of detection. That is, the objective functions for the *pluralistic regime* with independent decision making by the Customary System and the State System (eqs. 5 and 6, respectively) are as follows:

$$\text{Max}_{p_c} D: p(p_c, p_s) \cdot S - c_c(p_c) \quad (5)$$

$$\text{Max}_{p_s} D: p(p_c, p_s) \cdot S - c_s(p_s) \quad (6)$$

And the first order conditions for  $p_c$  and  $p_s$  are:

$$p_c(p_s)^*: \frac{\partial c_c}{\partial p_c} = \frac{\partial p(p_c, p_s) \cdot S}{\partial p_c} \quad (7)$$

$$p_s(p_c)^*: \frac{\partial c_s}{\partial p_s} = \frac{\partial p(p_c, p_s) \cdot S}{\partial p_s} \quad (8)$$

These are the reaction functions of the customary legal system and the state legal system, respectively, given that each chooses its own level of enforcement effort subject to the

general level of enforcement attained through the interaction of efforts under both systems. Note in the first instance that conditions (7) and (8) are identical to (3) and (4), with the only difference being the manner in which equilibrium inheres.

We turn now to the nature of the equilibrium that occurs in the context of systemic interaction. We are interested in exploring how one system will respond when the other alters its choice regarding detection; that is, are the two systems acting as substituted for one another in the manner posited by Posner and Rasmussen and others? If we differentiate the two functions to ascertain the slopes of the reaction functions, we can determine the general nature of the relationship between the two legal orders:

$$\frac{dp_c}{dp_s} = - \frac{\frac{\partial^2 p(p_c, p_s).S}{\partial p_c \partial p_s}}{\frac{\partial^2 p(p_c, p_s).S}{\partial^2 p_c}} \quad (9)$$

$$\frac{dp_s}{dp_c} = - \frac{\frac{\partial^2 p(p_c, p_s).S}{\partial p_s \partial p_c}}{\frac{\partial^2 p(p_c, p_s).S}{\partial^2 p_s}} \quad (10)$$

These differentials - the slopes of the two reaction functions – provide us with the basic nature of the relationship between the two systems. If the numerators are negative in sign (i.e.

$\frac{\partial^2 p(p_c, p_s).S}{\partial p_c \partial p_s} < 0$  and  $\frac{\partial^2 p(p_c, p_s).S}{\partial p_s \partial p_c} < 0$ ), this implies substitutability between efforts within the two

systems.<sup>22</sup> The greater the degree to which the two legal orders are substitutes, the steeper the functions become, approaching a slope of -1 when they are perfect substitutes. If the reaction functions have a slope of zero, this indicates that the enforcement levels of the two legal orders are invariant to one another. Finally, if the slopes of the reaction functions are upward sloping, this indicates a complementary relationship between the two legal orders –

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<sup>22</sup>Given the assumption of diminishing returns to enforcement activity, the denominators of the two reaction functions must be negative.

enhanced enforcement efforts under one regime would result in increased efforts by the other as well.

We would argue that the numerator is in most instances going to be negative, and that this is the fundamental meaning of the argument that legal systems behave as basic substitutes in addressing *common wrongs* in any society.<sup>23</sup> This is akin to an assumption of *free disposal*: so long as the efforts of both systems continue to have a *non-negative* impact upon the overall perceived level of detection, then the optimal choice in an optimal deterrence model is likely to be to react to others' freely supplied efforts with fewer of your own. This is because the MC of the decision maker's own effort will remain the same (since its choice has not yet altered), while the marginal benefit will have declined (so long as the enforcement effort of the other agent has increased the level of detection). In this respect, the observed substitutability is an outcome of the assumptions that a) each system is pursuing optimal deterrence (rather than maximal); and b) each system has a non-negative impact for each unit of effort supplied.

What will be the aggregate outcome of this interaction? In our much-simplified context, the Nash Equilibrium will also be the socially optimal outcome for this society, since the first order conditions above are also the marginal conditions for the socially optimal level of deterrence.<sup>24</sup> This result depends of course on the assumed nature of the overall social

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<sup>23</sup>If a wrong is idiosyncratic to one system we would expect the degree of substitutability to be zero and the slope of the reaction function to be flat.

<sup>24</sup>The first equation is the social optimum if the social objective is also optimal deterrence, and the agreed sanction is the common sanction  $S$ . This is because in the FOCs, when  $p_s c_s$  is fixed, the only difference between private cost and social cost is the constant  $p_c \cdot c_c$ . Similarly, for the second FOC,  $p_c$  may be considered fixed. Therefore the marginal conditions for the optimal solution are the same under both unitised and bilateral regimes. However, it must be noted that a wrongdoer faces the possibility of multiple punishments for the same



objective function regarding criminal acts and wrongful behaviour, and so depends on the specification adopted for that function; however, the Nash equilibrium between the two systems here would approach the social optimum so long as the social objective (and thus the socially optimal sanction  $S$ ) is simply a unitised version of the optimal deterrence objective adopted by the two separate regimes.<sup>25</sup>

In short, the analysis we have presented here thus far is analogous to those of Zasu (2007), Posner and Rasmussen (1999) and others. We have demonstrated, in this very simple model of legal system interaction, the two systems are likely to behave as basic substitutes for one another, and the outcome of this interaction is likely to approach the socially optimal outcome of these legal systems (i.e. the outcome that would result if they were unitised). In short, one system will respond to replace efforts not supplied by the other, and the more cost-effective of the two systems is likely to supply the greater amount of enforcement effort. This is essentially the analysis used by other analysts to justify the introduction of a new (improved) legal system overlaying a previously existing one. The argument is that legal systems behave as basic substitutes for one another (as above) and so the introduction of an improved one will act to displace the inferior one.

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wrong (if detection occurs under both systems), the possibility of which may result in excessive aggregate deterrence. So – although the marginal conditions for deterrence of wrongs are efficient under both unitary and plural systems – the plural system may result in reduced “entry” (effectively, removal from the jurisdiction on account of perceived rates of detection).

<sup>25</sup>The social objectives regarding deterrence of criminal acts may vary, so long as both systems adopt the same objective. For example, the objective may be the deterrence of all such acts deemed wrongful, or it may be the deterrence of such wrongful acts only to the extent to which they are deadweight losses to society.

## 2.2 The Phenomenon of Legal Dissonance: Negative Production Externalities

The problem with this analysis is that it fails to recognise the many other ways in which interaction might occur between two legal regimes. Interaction within the technology of enforcement has many avenues down which it might work, not simply that of the commonly determined detection level. Thus far we have considered how detection efforts might contribute to the commonly perceived detection level *ex post*, for example by means of supplying information to the other regime that aids its detection process (by identifying potential suspects and miscreants for example).

Another possibility is that the enforcement technology might also possess other characteristics by which contemporaneous enforcement efforts interact less positively. For example, it could be the case that a customary regime might provide resistance to the enforcement apparatus of the state (obstructing its passage or resisting the imposition of its authority). Likewise, the state apparatus might set up obstructions to the effective exercise of customary power. For example, the most potent non-state sanctions, retributive violence and compensation demands, are usually considered crimes by the state and their imposition resisted. In addition, it can be the case that there is even more straightforward “interference” between the two systems, when the individuals charged with enforcing one are imbedded in another. It is often the case that state law enforcement is corrupted through kinship obligations. For example, a police officer may face customary obligations to protect kin from state prosecution, meaning that they are breaching obligations to one system or the other no matter what they do.

In short, although *ex post* outputs of the enforcement processes of the two systems might often substitute for one another, the contemporaneous occurrence of the two processes are more likely to provide interference to the straightforward operation of one another – a

phenomenon we term *legal dissonance*. We refer to the case in which enforcement costs in one system are impacted negatively by efforts within the other as the case of *negative production externalities* within the enforcement technology, and this is a basic example of the phenomenon of legal dissonance. Although the basic nature of the ex post relationship between systems might be for them to act as substitutes for one another, we consider the phenomenon of dissonance in production technology to be as prevalent as the fundamental substitutability of outputs described above.<sup>26</sup>

We turn now to the modelling of this phenomenon. The presence of externalities can be captured in each legal order's cost function, whereby effort levels of one legal order affect the other's enforcement costs. This captures the idea of *legal dissonance* set out above, wherein the additional efforts expended under one system produce actual friction to the operation of the other.

We will capture the concept of such dissonance by means of a decreased cost-effectiveness of expenditures under one system when there are increased expenditures under the other. The cross derivatives of interest are:

$$\frac{\partial c_c^2(p_s, p_c)}{\partial^2 p_s(\cdot)} \text{ and } \frac{\partial c_s^2(p_c, p_s)}{\partial^2 p_c(\cdot)} \quad (11)$$

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<sup>26</sup>Positive externalities might also result from the social ordering function that each legal order provides or the support it provides the other. Higher levels of community cohesion and internalisation of 'good' behaviour can enable the other legal order to operate more effectively. Some legal scholars such as Rouland (1994: 49) argue that the state legal order would be inoperable without internalised norms and non-state institutions. Customary law enforcement may also benefit from the presence of the state legal order, for example, by using the threat of notifying the state's agents if wrongdoers try to avoid a customary sanction. Given these effects it is likely that each legal order will generate positive effects on the other.

The signs of these derivatives indicate whether a legal order produces net positive, net negative or no external effects on the other. If the sign of the cross derivative in (12) is negative, it indicates that increases in expenditures on efforts by the state regime will decrease the marginal costs of customary law enforcement and therefore positive externalities are generated. If the sign of the cross-derivative is positive, it suggests the presence of negative production externalities and hence the phenomenon of legal dissonance.

If we keep the modelling assumptions as before, but now account for such production externalities, the optimal deterrence objective for each of the two regimes becomes:

$$\text{Max}_{p_c} p: p(p_c, p_s) \cdot S - c_c(p_s, p_c) \quad (12)$$

$$\text{Max}_{p_s} p: p(p_c, p_s) \cdot S - c_s(p_c, p_s) \quad (13)$$

The first order conditions (reaction functions) for expenditures by the two regimes are:

$$p_c(p_s)^*: \frac{\partial c_c(p_s, p_c)}{\partial p_c} = \frac{\partial p(p_c, p_s) \cdot S}{\partial p_c} \quad (14)$$

$$p_s(p_c)^*: \frac{\partial c_s(p_c, p_s)}{\partial p_s} = \frac{\partial p(p_c, p_s) \cdot S}{\partial p_s} \quad (15)$$

From the two reaction functions above, it can be seen that each legal order's marginal cost of enforcement can be affected by the enforcement level undertaken in the other. Each legal order will equate its own marginal cost of enforcement with the marginal benefit of deterring wrongs, and so (with negative production externalities) if efforts at enforcement are being made by the other system, it can raise the marginal costs of undertaking efforts within the other. This will reduce the incentive to undertake efforts within each system.

More generally, we can see how the presence of negative externalities in the production technology changes the relationship between the two systems. Through total differentiation, the slope of the reaction functions becomes:

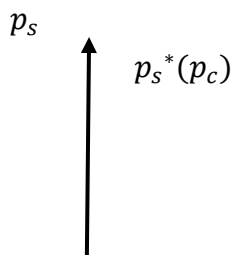
$$\frac{dp_c}{dp_s} = - \frac{\left[ \frac{\partial^2 p(p_c, p_s)}{\partial p_c \partial p_s} \cdot S - \frac{\partial^2 c_c(p_s, p_c)}{\partial p_c \partial p_s} \right]}{\left[ \frac{\partial^2 p(p_c, p_s)}{\partial^2 p_c} \cdot S - \frac{\partial^2 c_c(p_s, p_c)}{\partial^2 p_c} \right]} \quad (16)$$

$$\frac{dp_s}{dp_c} = - \frac{\left[ \frac{\partial^2 p(p_c, p_s)}{\partial p_s \partial p_c} \cdot S - \frac{\partial^2 c_s(p_c, p_s)}{\partial p_s \partial p_c} \right]}{\left[ \frac{\partial^2 p(p_c, p_s)}{\partial^2 p_s} \cdot S - \frac{\partial^2 c_s(p_s, p_c)}{\partial^2 p_s} \right]} \quad (17)$$

The issue of interest is how the change in efforts within one system impacts upon the marginal costs, and hence the optimal level of effort expended, in the other. This is represented by the cross derivative of the cost function in the numerator of each expression. The effect of both legal orders imposing negative production externalities upon one another is that these cross derivatives are positive, and so the relationship between the systems (as substitutes) is reduced.

The interaction between systems may be seen in Figure 1 below, where both reaction functions become steeper relative to the case where no production externalities are present. The presence of externalities will see the generation of a new Nash Equilibrium that depends on the signs of the terms above - which are impacted by the derivatives  $\frac{\partial c^2_c(p_s)}{\partial^2 p_s(\cdot)}$  and  $\frac{\partial c^2_s(p_c)}{\partial^2 p_c(\cdot)}$ .

When there is legal dissonance (e.g. from negative interaction in enforcement production technologies), the new Nash Equilibrium sees both legal orders withdraw enforcement and the overall level of deterrence falls. In Figure 1, the outcome of dissonance is that enforcement efforts shift from  $(p_c^*, p_s^*)$  to  $(p_c', p_s')$ .





is a superior one. The new regime may instead generate a much more inferior and lasting outcome – resulting from the conflicts between the two.

### **3. Results and Discussion: Documenting Legal Dissonance in Papua New Guinea**

This model fits well with the circumstances of a jurisdiction such as Papua New Guinea (PNG) where two legal systems are coterminous (state and customary): both legal orders impose high sanctions on wrongful acts, significant negative production externalities exist, enforcement levels are low, and some wrongdoers are excessively punished.<sup>28</sup> The overall outcome in this society is high levels of crime and disorder.

As in much of the post-colonial world where a transplanted criminal law was overlaid on a pre-existing customary law, parts of Papua New Guinea have a serious crime problem, and society is in a state of significant disorder. Foreign Policy (2009) listed the capital of Papua New Guinea, Port Moresby, as one of its five ‘murder capitals of the world’. Crime

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<sup>28</sup>Our model predicts that while the overall expected punishment can be low (due to withdrawal of enforcement efforts under both systems), some unlucky offenders will nevertheless be detected under both systems and thus face high aggregate sanctions for a single act. Given that the customary legal order usually works much more rapidly, it is possible for a customary settlement to be made quickly and a state sanction to occur much later. From recent fieldwork (Larcom 2012) and supported by Forsyth (2009) in Vanuatu, some respondents considered the multiplicity of legal regimes as unjust for precisely this reason. While the courts do take large compensation payments into account in sentencing, it normally sees a life sentence reduced by only two to five years (Chalmers *et al* 2009).

victimisation surveys across countries suggest that rates of serious crime (murder, rape and robbery) in Port Moresby are very high.<sup>29</sup>

There are two distinct legal regimes in place now in PNG. Most potentially wrongful acts in Papua New Guinea are subject to the provisions of the Criminal Code, which was transplanted from the Australian State of Queensland early last century. Until the mid-1960s, however, a system of legal bifurcation functioned, with legal analysts concluding that transplanted law ‘was effectively reserved for European residents’.<sup>30</sup> (Weisbrot 1982: 66) In the mid-1960s, the recommendations of Derham (1960, 1963) were adopted as official state policy and the transplanted criminal law (from Australia) was placed over the entire population, a practice that continues today. The police force was instructed to enforce the state law against all, and those who come before the state courts convicted of grave crimes were sanctioned by the state (Chalmers *et al* 2009), and irregardless of the community’s response to the wrongful behaviour. On the other hand, customary law also continues in existence, and is applied at the level of kinship (or *wontok*) group.

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<sup>29</sup> For actual data see Egan *et al* (1995). For a comparative crime rate study of Port Moresby and Papua New Guinea see Levantis (2000). More recent crime victimisation surveys of Port Moresby (Guthrie *et al* 2006) and Lae (Guthrie *et al* 2007) suggests that violent crime rates remain extremely high. Victimisation data reported by Van Dijk *et al* (2008) suggests that violent crime victimisation rates in the developing world are generally higher, particularly in urban environments. For instance, annual victimisation rates for robbery in developing country cities surveyed (which do not include Papua New Guinea) are reported to be 6.1 per cent. The victimisation rates recorded in Van Dijk *et al* (2008) suggest that violent crime in many developing cities is extremely high, for example they report Johannesburg as having a victimisation rate for assault (and threats) at over 10 per cent per year.

<sup>30</sup> Those indigenous Papua New Guineans who were tried in colonial courts were usually sentenced leniently if they were motivated by customary the practice of customary law, even for the gravest of crimes, as it was acknowledged they were ‘not criminals in the true sense of the word’ (Gore 1965:88).



While both legal orders deem activity that threatens personal security as wrongful *per se* (including murder, rape, and robbery) they have very different production technologies for providing a deterrent against such behaviour. In order to more fully understand the production externalities generated, the cost functions of the two legal orders can be more fully specified.<sup>31</sup>

### 3.1 Generating Dissonance: Externalities in Production Technologies

The state enforcement technology - on relaxing the assumption about monotonic costs of enforcement - may now be represented as follows:

$$[(c_s(e_s(k_c, r_c; X_s)))] \quad (18)$$

Here the costs of the state enforcement mechanism,  $c_s$ , vary with respect to the level of state enforcement activity  $e_s$ . The impact of these efforts is now a function of the characteristics of the community regime, and the characteristics of the state legal system (captured by the vector  $X_s$ ).<sup>32</sup> The primary characteristics of relevance regarding the community regime are the level of kinship ties and the extent of payback, designated here as  $k_c$ , the degree to which the society is organised at the community level, and  $r_c$ , the availability of retributive sanctions (or *payback*) at this level.

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<sup>31</sup> Recall that in section 2 we suppressed the representation of enforcement efforts and simply assumed that costs and detection varied monotonically with these efforts. In this section we relax this assumption, and examine how costs might vary with differing enforcement technologies, and the interaction between them.

<sup>32</sup> The vector of system characteristics  $X_s$  includes all those facets of the system other than enforcement effort itself. The vector is likely to include the level of technology available to the legal order (for example the use of mobile communications, fingerprinting, and surveillance equipment) and the methods used by the legal order's agents, such as the use of the police and the courts, as well as some of the legal principles it applies to detection activities (right to counsel, right to silence).

The presence of externalities is primarily accounted for by the existence of these characteristics of the community regime within the cost function of the state regime. We would expect that for *increases* in the intensity of kinship obligations  $k$ , the effectiveness of state enforcement efforts would decline and so the enforcement costliness of a given level of state detection would increase.<sup>33</sup> This is so for several reasons, including the reluctance of an organised kinship group to go to the police, to bear witness in court, or to allow the police to engage with members of the community.<sup>34</sup>

The most significant negative externalities concern the impact of kinship obligations upon those individuals actually working within the state enforcement agencies.<sup>35</sup> When state officials put their customary obligations before their official ones this is referred to as *wantokism* and the phenomenon is ubiquitous in Papua New Guinea (Dinnen 2010). Agents of the state enforcement mechanism must necessarily feel conflicted in the performance of their official duties. As community (or kinship organisation) increases, the pervasiveness and costliness of these conflicts increases, and so the cost of state enforcement increases.

Another source of conflict inherent within a pluralistic enforcement mechanism is the importance of payback (or retributive sanctions) within the customary system. If the customary system detects wrongful behaviour, then the customary means of sanctioning such wrongfulness is by retributive acts of the kinship group. Customary enforcement is undertaken by those who are wronged and by wontoks, a practice commonly referred to as

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<sup>33</sup> That is:  $\frac{\partial c_s}{\partial k} > 0$

<sup>34</sup> This was also found by Forsyth (2009) in neighbouring Vanuatu.

<sup>35</sup> The importance of kinship obligations and the negative role it can play in relation to the functioning of the state has long been recognised in Papua New Guinea (see Lawrence (1969) and Jinks *et al* (1972) who report on the early colonial administration).

*self-help* (Pitts 2001).<sup>36</sup> Kin are obliged to protect their group and to help enforce customary sanctions under the principle of reciprocity.

This retribution may be corporal or compensatory in nature, but it is a critical part of the system that such retribution is quick and certain. When payback exists, the enforcement costs of the state system increase because both community members and state agents are conflicted about enforcing state laws against these acts. Members of the state enforcement apparatus are necessarily conflicted when they see that a required sanction under one regime is also a crime under the other.

Externalities exist within the two systems since the presence of a vibrant customary system (i.e. positive values of  $k$  and  $r$ ) results in increasing costliness of enforcement within the state system. This is simply because the existence of the kinship system and payback sanctions results in conflicts within the state enforcement mechanism. Analogously, the existence of a vibrant state system results in increasing costliness under the customary system, since these conflicts exist in that direction as well (e.g. required retributive are rendered illegal under state law and hence may be more costly to administer).

### **3.2 Documenting Dissonance – A Survey about Payback Killings in Papua New Guinea**

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<sup>36</sup>See Posner (1983), and Parisi and Dari-Mattiacci (2004) who provide an economic rationale for the main principles of customary law similar to those described above. The threat of physical force, sorcery and large compensation payments also provides a powerful form of social control within groups, as each member within the group has an incentive to control and monitor the behaviour of others within it, as under group liability they may be held liable for the wrongs committed by others.

The importance of such externalities was investigated in the course of a survey of 200 respondents across both urban and rural communities in the provinces of East New Britain, West New Britain and the Autonomous Region of Bougainville in Papua New Guinea in late 2010. The survey provided various hypotheticals to members of the public, requesting their views on the nature of the customary legal regime, the state legal regime and the interactions between them. Some of the results from this survey are summarised in Table 1 below.

One of the most consistent findings from the fieldwork was the perceived failure of the police to sanction serious wrongs due to *wantokism*. When the respondents were asked the appropriate action of a police officer whose cousin had committed a homicide 83 per cent stated that he should arrest his cousin, 12 per cent stated that he should declare a conflict of interest, and only 6 per cent stated that the police officer should help his cousin to flee.

Hence, while most respondents agreed that a police officer *should* arrest his cousin, there was a common belief that he would not. Almost all survey respondents indicated that they would not expect police to act against members of their own kinship group. These results suggest that while the costs of *wantokism* are well understood, they continue to persist. This is supported by Dorling (2011) who reports that United States officials based in Port Moresby consider that Papua New Guinea's most urgent problem is the near-collapse of the performance of basic responsibilities by its police force.

As can be seen from some summary statistics from this survey, kinship relations play an important role in determining the individual's perceptions concerning the interactions between the customary regime and state criminal law in PNG<sup>37</sup>. When survey respondents in

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<sup>37</sup>The survey took place during October to December in 2010 urban and remote rural areas in the provinces of East New Britain, West New Britain and the Autonomous Region of Bougainville. Of the 200 questionnaire responses collected with 23 from the Autonomous Region of Bougainville (19 from Buka Island), 115 from East New Britain and 62 from West New Britain and all possible efforts were taken to avoid sampling bias. The

were asked how they would respond if they were a victim of a robbery, 45 per cent stated that they would go to the police and 55 per cent stated they would seek a customary sanction. When asked if this answer would change if the perpetrator was a member of the same or neighbouring community, 36 per cent responded that they would go to the police, while this fell further to 25 per cent if the perpetrator was kin. Even for victims of crime, customary regimes displace state ones as kinship relations become more important facets of the event.

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survey was conducted in both English and *Pisin*. Respondents were asked vignettes in order to illicit more accurate preferences. Full details of the survey and survey results can be found at Larcom (2012).

**Table 1: Source of Negative Production Externalities in PNG  
Respondents who Report Support for the Payback System (%)**

<b>Kinship: Respondents who will report a wrong to the police if Perpetrator is -</b>		
Perpetrator: unspecified 45%	Perpetrator: Neighbour 36%	Perpetrator: Kin 25%
<b>Payback: Respondents who report that they will support payback for a killing if the Homicide is -</b>		
Homicide: Deliberate 29%	Homicide: Accidental 15%	Homicide: Any 36%
<b>State Regulation: Respondents who report that they support the regulation of payback killings by -</b>		
Punishment: Life Imprisonment 42%	Punishment: Reduced Sentence 38%	Punishment: No imprisonment 20%

The importance of payback within well-organised societies also produces conflicts between the community and state regimes. Payback is an essential element of the customary system, as it provides swift sanction to those who are deemed in violation of that system. Serious wrongs such as homicide can even result in *payback* killings. This led Narokobi (1996: 176) to conclude that in Papua New Guinea ‘killing is not a crime, but a punishment’. As can be viewed in Table 1, 36 per cent of respondents agreed with the use of payback killings in one or both of the scenarios. For an accidental death, 15 percent of respondents agreed while 29 per cent agreed in the case of a deliberate killing.<sup>38</sup> Similarly it can be also seen that the

<sup>38</sup> It is also noteworthy of those who agreed with the use of payback slightly more agreed with killing a member of the offender’s family rather than the actual offender. These responses highlight the fact that the ‘traditional’ customary norms of strict liability and group liability also still hold some currency in Papua New Guinea. Only 12 per cent of respondents agreed with taking no further action under the accidental killing scenario. It is also noteworthy that in both absolute terms and once controlling for other personal and geographical characteristics

majority of respondents considered that payback killings should be treated leniently by the state with 20 per cent considering that payback killers should face no prison sentence at all. However, the most commonly practiced customary sanction is a demand for compensation, which for homicide ranges from \$8,000 to more than \$40,000 depending on the site and circumstances (Larcom 2012). In a country where average annual income is approximately \$1,300 per year, this is a considerable sum, and the assistance of an extended kinship network usually is required for resolution.<sup>39</sup>

Despite these expectations at community level, retribution remains a crime under state law which attracts the highest possible state sanctions.<sup>40</sup> This dissonance undermines the customary regime in a fundamental way, since it is the threat of payback that provides a strong incentive for the payment of customary compensation. While kinship obligations, social pressure, and internal motivations all play an important role, people are aware that if they commit a serious wrong under customary law, they face the very real threat of violent retaliation, and this is the fundamental basis of effectiveness within the customary system. As

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urban respondents were more likely to agree with the use of payback than rural respondents; this suggests that the potential for legal dissonance is higher where state law enforcement is also higher. Numerous authors, such as Narokobi (1993), Weisbrot (1982) and Strathern (1993) who have written on Papua New Guinea have highlighted the principles of payback, compensation, group liability and strict liability. Indeed, some such as Posner (1983) argue that there are strong 'institutional similarities' across most types of customary law in tribal societies across both place and time.

<sup>39</sup>100,000 Kina equates to approximately 30 times annual average income. In the United Kingdom, where average annual income is approximately \$36,000 it would equate to over \$1 million.

<sup>40</sup>As reported by Kelola (2010) in *The State v. Monodoao*, a National Court judge sentenced a man convicted of wilful murder to life imprisonment for a payback killing. In sentencing, the judge put future payback killers on notice that a death penalty for such behaviour may be forthcoming to serve as a deterrent.

Strathern (1993) concluded, removing violent retaliation from customary law is similar to removing the threat of prison under the state legal order.<sup>41</sup>

Overall, the results from our survey highlight the nature of the externalities existing within the production technology at state level. The presence of important kinship relations and customary payback sanctions renders state enforcement technology more costly to apply. The reason for this is primarily the fact that strong kinship and high payback results in conflicting incentives for state enforcement personnel, who are subject to both a community regime and a state regime. These conflicts create costliness within the enforcement technology, and hence increase the costliness of detection.

The outcome from these conflicts is a much-reduced level of effort supplied by either system. The use of retributive violence and large compensation payments to sanction serious crimes in Papua New Guinea still occurs with some degree of regularity (see Goddard 2009, Larcom 2012), but the fact that life imprisonment is the mandated penalty for a payback killing, it must be assumed that this has some impact upon customary retributive enforcement. In regard to state law enforcement, little effective effort is evident. Papua New Guinea has an average of one police officer per 1084 people compared to the global average of 400.<sup>42</sup> The Papua New Guinea Law and Justice Sector Secretariat (2007:11-39) reported that the national arrest rate for murder is 27 per cent, rape 22 per cent and robbery 16 per cent (*of reported*

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<sup>41</sup>In neighbouring Vanuatu, Forsyth (2009) also found that when the state sanctions an offender after the wrong has been sanctioned and remedied under customary law it can also re-ignite tensions in the community concerned and cause resentment toward the police and state courts.

<sup>42</sup>This is in line with a general trend that shows post-colonial societies have lower state law enforcement levels (see Papua New Guinea Law and Justice Sector Secretariat (2007) and Shaw *et al* (2003) for comparisons).



crimes). Of those who were arrested, found guilty and imprisoned, many escape, with 7 per cent of the entire prison population escaping each year.<sup>43</sup>

The overall outcome is, as mentioned previously, that parts of Papua New Guinea remain listed amongst the “murder capitols of the world”. This is a remarkable outcome in a country that appears at first sight to be a small undeveloped rural idyll. Although the island has long been subjected to the travails of inter-tribal violence and warfare, the transplant of an additional legal regime over the existing tribal ones appears to have resulted in increased levels of violence and conflict. The dissonance between legal regimes makes it difficult for either one to operate effectively, and results in an aggregate outcome that is inferior to either acting alone. Most importantly, it is apparent that the introduction of the modern state regime in the 1960s has made little progress toward replacing the long-standing kinship regime. Papua New Guinea has been placed within an institutionally-inferior transition phase of pluralism, and the inefficient legal dissonance that has resulted from this multiplicity of institutions.

#### **4. Conclusion**

It is well-established that the outputs from different legal regimes can act as substitutes for one another in supplying deterrence in the societies subjected to them. Legal pluralism can be thought of in part as a transition phase between different systems, when a new and assumedly more efficient system is introduced to displace an earlier one. In this view of legal pluralism the fundamental forces driving systemic change are the incentives for the

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<sup>43</sup> We note the high escape rate because, under a pluralistic system, it makes sense to consider the overall outcome under the two legal regimes, since the two regimes’ conflicts may also work in sequence (arresting and releasing) as well as in tandem.

implementation of a more cost-effective mechanism for achieving the same social outcomes, and the tendency of the system to move toward the more efficient (state) system.

We have explored a very different facet of this transition phase, and one that is well-known to those working within the context of legal transplants. In this context, although the fundamental nature of the relationship between the outputs from these legal regimes may be substitutability, the fundamental nature of the relationship between their input technologies may be conflict. This legal dissonance between regimes means that the phase in which both apply may be less efficient at supplying the desired social outcome (here, deterrence of wrongful behaviour) than the phase in which either regime applies alone.

We have provided an example of such dissonance in the form of the negative production externalities between enforcement regimes, in which the costs of enforcement in one regime are positively related to additional efforts supplied within the other. State agents may be charged with the enforcement of the state regime, but also be responsible for implementation of the local regime. Such dual obligations under coterminous regimes create conflicts within such agents, and costliness within the enforcement technology of both regimes. In such a context, the equilibrium outcome is for each regime to reduce its level of effort, and thus for aggregate enforcement to be reduced.

In this respect we can see that legal dissonance may result in enhanced disorder and lawlessness, even as the number of legal regimes proliferates. This is a fact of life observed in many states in this transition phase, as in the specific case of Papua New Guinea and as demonstrated by the case study discussed here. Order may indeed come into existence in the absence of any particular legal regime, but disorder is also a potential outcome in those societies existing under more than one regime at the same time.

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