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DOCUMENTING LEGAL DISSONANCE: LEGAL PLURALISM IN PAPUA NEW GUINEA

S.LARCOM, T.SWANSON

Documenting Legal Dissonance: Legal Pluralism in Papua New Guinea

Shaun Larcom[a] and Timothy Swanson[b]

Abstract

We examine the case of payback killings and similar retributive sanctions in the context of a transplant regime such as that existing in Papua New Guinea. This is a post-colonial regime with multiple overlaid legal systems, with significant negative interaction existing between the different regimes. We explain how multiple regimes can co-exist in the context of negative externalities. To explain such an outcome, we provide a simple model for considering the interaction between legal regimes within a single jurisdiction. We demonstrate that, even when the fundamental relationship between 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 model is then applied to the post-colonial state of Papua New Guinea where we use survey data to identify significant negative production externalities in the enforcement of informal law. We suggest that disorder may be the outcome of too much law.

Keywords: Legal Pluralism, Social Norms, Enforcement Externalities

JEL: O17, P48, K42, L51

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[a] **Dr Shaun Larcom**, Centre for Development, Environment and Policy, SOAS, University of London Thornhaugh Street Russell Square; and Department of Land Economy, University of Cambridge, 19 Silver St, Cambridge, CB3 9EP, United Kingdom, and Email: sl74@soas.ac.uk

[b] **(Corresponding Author) Professor Timothy Swanson,** The Graduate Institute – Geneva, Case Postale 136**,** 1211 Geneva 21**,** Switzerland**,** Tel: +41 22 908 6217, Fax: + 41 22 908 57 10**,** Email: tim.swanson@graduateinstitute.ch.

1. Introduction

Prior to the creation of the state of Papua New Guinea, the same territory contained many different extant legal regimes. Each locality was assembled under a local set of rules or norms, and enforcement of these norms was based on the principles of "kinship group" or collective responsibility regime. Under such a regime, each individual in the group assumed responsibility for monitoring and enforcement of the local norms. A common mode of enforcement, against members of other kinship groups, was the "payback killing": the taking of a life from another group in response to the incurrence of a wrong in the first. Then in the mid-1960s, and under a colonial regime installed by the Australian government, the Derham reforms adopted a criminal justice system similar to that existing in the colonising state. Such a system adopted the western principles for enforcement, incorporating an independent policing system and a prohibition against vigilante-ism. The goal was the pursuit of a transition to a modern state, by the substitution of a western legal order for the preceding customary one. The belief was that the overlay of a seemingly superior regime would supplant the pre-existing one, and occasion a smooth transition. In essence, much of the enforcement system that existed under the preceding system was rendered illegal under the new criminal justice system.

Here we examine the assumptions on which such substitutions of transplanted legal regimes are based, and question the belief that smooth transitions are possible when one regime is over-laid upon another. How does such transition occur? Will the outcome of the interaction of multiple legal regimes necessarily be the rapid substitution of one for the other, or are there forces at work that will occasion frictions and inefficiencies? We will examine the conditions under which ease of substitution is to be expected, and those in which frictions and

costliness will be incurred. We will argue that the transplant of western criminal justice to pre-modern Papua New Guinea was an example of the latter.

It has long been established that order can exist without law (Ellickson 1994); however, can order exist where multiple legal regimes interact? The literature has largely been sanguine about the impact of a multiplicity of regimes, and the ultimate prospect for better institutional arrangements to evolve out of competing alternatives.

If states are strong and functional, then monopolisation by the state avoids the problems of unconstructive regime interaction and the costs of duplicating efforts across competing regimes. (Landes and Posner 1975). But when states are weak, bargaining or private enforcement may be the preferred institution, and may outcompete the state in the provision of criminal justice services (Shavell 1993, Garoupa and Gomez-Pomar 2004; Garoupa and Klerman 2010). There can also be complementarities between competing institutions, as when private enforcement complements public enforcement (Friedman 1979, 1984; Ben-Shahar and Harel, 1995; McAfee et al 2008) or when norms supplement law (McAdams and Rasmusen 2007). Much of this literature fits within the long-established theoretical framework that sees the evolution of institutional efficiency as the outcome of competition between institutional forms, in which inferior institutions are replaced by superior ones as circumstances change and norms evolve (Demsetz 1967; Hirschleifer 1982).

The most pertinent analysis of legal pluralism is in this same vein. (Zasu 2007) This analysis argues that non-state (customary) sanctions can act as either complements or substitutes to state sanctions, and that the nature of the relationship will be determined by the relative institutional costs. He suggests that the costs of customary regimes drive the evolution of institutions in pluralistic societies: the costs of non-state law enforcement rise as societies

become less socially connected, and so there is then an optimal substitution toward state enforcement mechanisms.

There is a growing literature, however, recognising that there can also be an interesting (perhaps indefinite) transition phase regarding institutional outcomes in pluralistic societies. In this phase, the contemporaneous existence of multiple legal orders might persist and yield non-complementary outcomes. 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, and is indicative of problems arising from the identity of the agents involved as well as the institutions.[3] Many such previously stateless societies with overlaid modern criminal justice regimes evince low levels of state law enforcement and high rates of crime and disorder. Based on a cross-sectional analysis, Berkowitz *et al* (2003) have labelled these linked phenomenon – of disorder together with legal pluralism - the *transplant effect.*

This is our objective in this paper – we wish to 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 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

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[3] This might also explain why competing regimes are more readily addressed in other contexts, as when multi-national corporations are subject to legal regimes in multiple jurisdictions or when national legal regimes intersect at borders or in international commons. (See Drezner (2001) in context of transnational externalities or Barrett (2003) in context of the international commons.) States and multi-nationals are sometimes able to bargain better across boundaries, than with other actors within given boundaries, indicating that problems of legal pluralism derive as much from quality as quantity.

though their outputs might fundamentally serve as substitutes for one another.[4] 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.

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)[5] 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 force, while the customary regime emphasises kinship relations and the right to retribution. State efforts at enforcement conflict 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.

[4] 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 recognised that externalities can exist in the context of overlapping jurisdictions but the usual explanation lies in conflicting *objectives* between regulators, rather than common objectives and conflicting *technologies*.

[5] 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) caution against the state interfering in bilateral sanctions or weakening the power of groups to enforce their norms.

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 (*legal dissonance).* The impact of legal dissonance is to alter the reactions of regimes to efforts supplied to one another, so that they complement one another less constructively (*less substitutability*). The outcome will be reduced levels of effort by each of the regimes, and so a reduced aggregate enforcement level and hence increased crime and disorder (*more inefficiencies*). In section 3, we relate this analysis to the case of a classic example of a legal transplant, Papua New Guinea, and document how the co-existence of two legal regimes (state and customary) creates negative production externalities with regard to social control. In section 4, we conclude.

2. Theory: A Simple Model of Legal Pluralism

In this section we examine a simple model of the 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, similar to previous work in the field. But then we examine how the introduction of negative 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. $S_s=S_c=S$).[6] 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 represented by its expenditures on detection. 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 executions, while customary sanctions include compensation, beatings, and payback killings.

2.1.2 The Enforcement Technology

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

[6]Most legal orders seem to contain the doctrine of proportionality determining the relative magnitude of sanctions relative to the consequences of wrongful acts.

system's production function may rely more on physical capital and disinterested policing. 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 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. Later some of these assumptions are relaxed.

2.1.3 The Objective Function at Regime Level

It is assumed that the objective of criminal regulation at regime level is the optimal deterrence of wrongful acts.[7] Hence, any regime will try to optimise regarding D, the level of deterrence for a specified wrong:

$$Max \quad D = p(p_c, p_s).S(S_c, S_s) - c(p_c, p_s) \qquad (1)$$

[7]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. In doing so we will abstract from the idea that the society might have a more complicated objective than simple deterrence when creating norms and enforcement regime (that is, the norm being considered is well enough accepted to warrant that society – both local and more broadly – accepts that its violation should be minimised e.g. homicide). Effectively our assumption is that the norm establishes the societally optimal level of the regulated conduct, and the enforcement mechanism then simply attempts to achieve cost-effective enforceability. We recognise that this is a special case for society, but believe that this simplifying assumption renders our analysis much more straightforward to demonstrate without significant loss of generality.

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).[8] We will assume (for now) 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.

Consider first the simplest case of the choice of the optimal mix of inputs into producing deterrence when both instruments are under the control of a single decision making agency.

Proposition 1. The Socially Optimal Provision of Deterrence within a Unitised System.

A unitised entity controlling a single criminal justice system (monitoring and enforcement) in order to secure the maximum level of deterrence of a specified form of wrongful behaviour will use its instruments of enforcement optimally, recognising that expanding the use of one instrument is likely to render the optimal use of any other instrument lower. That is, under fairly general conditions, the two instruments for enforcement will behave as pure substitutes for one another. They will complement one another in producing the chosen outcome, but behave as substitutes when allocating inputs.

See Appendix A.1.

For a thought experiment, consider a type of wrongful behaviour that is controlled by two very different instruments under a single regime, 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

[8] 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).

instruments under a *unitised regime* would be to use as many traffic cops as were efficient given the number of speed cameras already in place.

This is a simple system of two linear 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 unitary authority internalises this and any other interactions through its understanding of the enforcement technology.

We now consider each instrument above to be under the control of a distinct legal order – the State System controls the number of speed cameras (s) and the Customary System controls the number of traffic cops (c). Each legal order's detection level is set to optimise the overall level of deterrence achieved given that order's 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. 2 and 3, respectively) are as follows:

Customary Legal Regime – Deterrence Problem:

$$\text{Max}_{p_c}\, D\colon\ p(p_c, p_s).S - c_c(p_c) \qquad (2)$$

State Legal Regime – Deterrence Problem:

$$\text{Max}_{p_s}\, D\colon\ p(p_c, p_s).S - c_s(p_s) \qquad (3)$$

We will assume that the aggregate level of enforcement effort obtained (and hence the *effective level of detection* p) is the joint outcome of the two systems' efforts interacting. We will also assume that the agencies respond directly to prevailing levels of crime and detection, and only indirectly to the specific choices made by the other regime. So, the phenomenon of 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, but without attempting to influence the choice of the other agency. This is essentially the set of assumptions necessary to narrow the potential outcomes from interaction to the set of Nash equilbria.

Proposition 2. Social Optimality under Pluralistic Legal Systems.

In a decentralised enforcement regime under a pluralistic system, under fairly general conditions, the Nash equilibrium that will be obtained will be equivalent to that which would obtain under the centralised or efficient solution (as in Proposition 1). That is, given that $\frac{\partial^2 p(p_c,p_s).S}{\partial p_c \partial p_s} < 0$ and $\frac{\partial^2 p(p_c,p_s).S}{\partial p_s \partial p_c} < 0$, *the agencies will make their choices as if the instruments are substitutes, and the optimal outcome achieved under decentralised choice by two independent agencies is likely to result in the same level of effort achieved under the centralised outcome.*

See Appendix A.2.

We would argue that the cross-partial listed above is almost always 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.[9] This negative cross-derivative

[9]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. This can be the source of other problems, however we focus on the case in

flows from the assumption of *monotonicity of the enforcement production function*: so long as the efforts applied by either agent/instrument continues 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.

Therefore, in our admittedly much-simplified context, the Nash Equilibrium in the decentralised system 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.

In short, the analysis we have presented thus far is supportive of the conclusions reached by 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. Given this analysis, the observed problems associated with legal pluralism should never arise.

2.2 An Example 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.

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which it is most difficult to perceive how the systems would interact negatively, i.e. a common wrong such as homicide.

Another possibility is that the enforcement technology might introduce noncomplementary forms of interaction. For example, a customary regime might provide resistance to the enforcement efforts of the state, or vice versa. For example, the most potent sanction, retributive violence, is usually considered to be unlawful by the state when exercised by non-official agents. In addition, it can be the case that there is even more straightforward interference between the two systems, e.g. when the individuals charged with enforcing the system of one are imbedded in the other.

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. We view this as a basic example of the more general phenomenon we term *legal dissonance:* the existence of frictions or inefficiencies that prevent one regime from working in a complementary fashion with the other. The presence of externalities can be captured in each legal order's cost function, whereby effort levels undertaken by one legal order affect the other's enforcement costs.

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

$$[(c_s(e_s\,(e_c, X_c; X_s))] \qquad (4)$$

Here the costs of state enforcement c_s vary with respect to the level of state enforcement activity e_s. The enforcement efforts taken by the state are in turn a function of the enforcement effort taken under the customary regime (e_c) and the characteristics of the customary regime (X_c), and the characteristics of the state legal system (X_s).[10] The primary

[10] The vector of system characteristics X_s includes all those facets of the system other than enforcement effort itself: including technology available to the legal order (e.g. the use of telecommunications, fingerprinting, and

characteristics of relevance regarding the customary regime are the level of kinship ties, the degree to which the society is organised at the community level, and the form and enforcement of sanctions in that regime.

The presence of externalities is primarily accounted for by the characteristics of the community regime within the cost function of the state regime, and the potential for negative interaction with the characteristics of the state regime. For example, we would expect that for *increases* in the intensity of kinship obligations, the relative effectiveness of state enforcement efforts would decline and so the enforcement costliness of a given level of state detection would increase.[11] 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.

Definition - Legal Dissonance:

We define a negative production externality in enforcement as being present when the following cross derivatives of interest are greater than zero, i.e.:

$$\frac{\partial c^2{}_c(p_s,p_c)}{\partial^2 p_s p_c(.)} \ and \ \frac{\partial c_s^2(p_c,p_s)}{\partial^2 p_c p_s(.)} > 0 \qquad (5)$$

This assumption merely states that, due to negative interaction between the characteristics of the two legal regimes, the increase in the use of an instrument by one agent increases the marginal cost of application of the instrument used by the other.

Now we are able to state our final proposition.

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surveillance equipment) and the methods used by the legal order's agents (e.g. the use of the police and courts) and legal principles (e.g. right to counsel, right to silence).

[11] That is: $\frac{\partial c_s}{\partial k} > 0$

Proposition 3. The Impact of Legal Dissonance in Legal Pluralism.

The existence of legal dissonance in the form of negative externalities in the enforcement production technology is sufficient to reduce the substitutability of efforts between the instruments or agents subjected to the externalities. The existence of negative production externalities renders it less likely that the instrument used by one regime will entirely substitute for the other (less substitutability) and also reduces the aggregate level of provision of enforcement by all regimes within the system (less efficiency).

See Appendix A.3

The basic reason for this fundamental change in outcome derives from the assumption on how efforts supplied within one system impact upon the marginal costs of efforts supplied within the other. This will determine the extent to which one instrument substitutes effectively for the other, and also the aggregate amount of enforcement supplied within the aggregate system.

The interaction between the two 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 bold lines represent the reaction functions without production externalities present, and the intersection of these lines (the NE) is the social optimum regarding the two instruments. The dashed lines are representative of the reaction functions of the two agencies when negative production externalities exist. The shift between reaction functions is indicative of the assumption that the cross-derivatives of efforts are positive, reducing the negative slopes of the two reaction functions.

In effect, it means that systemic choice now matters in terms of the instrument being applied. When the customary instrument is applied, the friction it generates with the state-sponsored system means that it is less effective (more costly) to supply more state enforcement efforts in its presence (than if there were no externalities). Efforts supplied across a mix of systems generates a less than optimal outcome (the problem of reduced substitutability).

Counter-intuitively, when there are two agencies attempting to solve the same enforcement problem, and when the instrument used by one is not a perfect substitute for the other, then the joint outcome will be to supply a reduced level of aggregate effort. That is, 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 the NE in enforcement efforts shifts from (p_c^*, p_s^*) to (p_c', p_s').

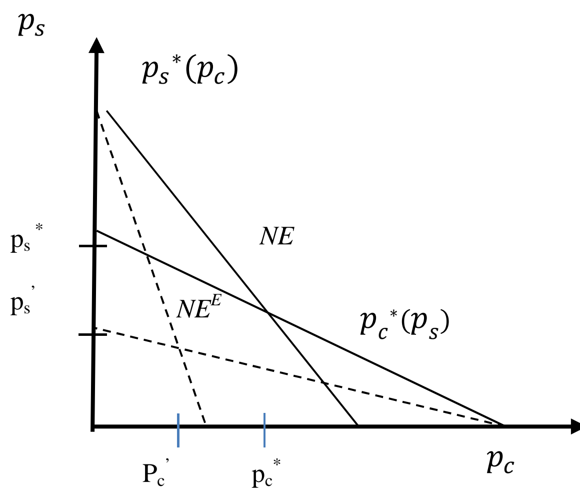

Figure 1. Impact of Legal Dissonance on Aggregate Enforcement Efforts.

In sum, our analysis in this section has demonstrated that, even in a model where legal regimes interact as basic substitutes for one another in the production of the overall deterrence level, the existence of friction between the two systems' production technologies

may negate this underlying relationship somewhat by reducing the incentives to supply inputs to enforcement. This phenomenon of legal dissonance – the basic friction between coterminous legal regimes – can have the impact of reducing the aggregate inputs into enforcement despite the multiplicity of regimes. Furthermore, it also indicates that it is not necessarily the case that the introduction of a second regime will automatically generate its substitution for the first, even if the new regime 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. Documenting Legal Dissonance in Papua New Guinea

This section demonstrates the existence of large and pervasive negative production externalities in a case study of a modern transplant regime, Papua New Guinea. While parts of Papua New Guinea are reported to have some of the highest crime rates in the world (Egan et al 1995; Guthrie et al 2006, 2007), it is not our objective to demonstrate any exclusive empirical link between pluralism and crime in this context. Papua New Guinea as a society contains many of the factors that influence criminality and determine crime rates, including income inequality, demographics, economic change and external influences.[12] Our goal is a more modest one – to simply demonstrate the negative production externalities existing between coterminous law enforcement mechanisms in a transplant society.

We do so by reporting results from a survey undertaken in late 2010 and complement these with socio-anthropological accounts of contemporary Papua New Guinea. The survey investigates the interactions of customary and state law, and took place in five urban and six rural sites in the provinces of East New Britain, West New Britain and the Autonomous Region of Bougainville; which together with New Island and Manus Island make up the New

[12] See Akers (2013) for a discussion of numerous other factors that can affect crime rates and criminality.

Guinea Islands region of Papua New Guinea. Of the 200 survey responses, 23 were from the Autonomous Region of Bougainville, 115 from East New Britain and 62 from West New Britain. The sampling method pursued in both urban areas and remote villages was aimed at gaining a randomised cross section of the community under complicated conditions, often including a lack of residency records and the presence of unknown persons entering some communities uninvited (in both urban and rural areas).[13] Of those who were asked to participate in the survey, approximately 36 % refused. The survey results aimed at ascertaining the respondents views on the appropriate sanctions for crimes under specified circumstances. While the survey was anonymous, for the questions concerning the use of payback killings, third person vignettes were used to reduce the potential for social desirability bias from respondents, which can be particularly prominent for surveys relating to criminal and ethical conduct (Chung and Monroe 2003).[14]

Before outlining the results from the survey, a brief overview of the legal circumstances in Papua New Guinea (in relation to the criminal law) is provided – to demonstrate the legal pluralism extant in this territory. In pre-colonial times, what now consists of the Independent State of Papua New Guinea was a collection of small stateless, and largely egalitarian, societies where social order and the sanctioning of wrongs was delivered through indigenous custom (Narokobi 1996). Following colonisation by European powers (both Britain and Germany) in the late nineteenth century (and subsequently by Australia) the people of Papua New Guinea were subject to a criminal law transplant. One of Governor MacGregor's first tasks was to pass basic legislation that included the adoption of the laws of the Australian

[13] In towns and villages, the goal was to have a respondent from every third residence surveyed, while in some larger villages and urban communities the survey was guided by local officials or relied on kinship networks. While the need for a random sample was stressed, and appreciated, the sampling method was not strictly randomised on account of the need for guidance in sampling. However, in order to gain a representative cross section of the community, household sampling was supplemented by sampling at marketplaces in towns and village stores in rural villages due to a number of residential 'no go' areas. For consistency with the market samples, there were follow-ups with the household samples.
[14] The vignettes and potential responses were adapted from the payback literature and actual court cases.

then-colony of Queensland (including its criminal law) as the *law* in British New Guinea (Jinks, Biskup and Nelson, 1973: 66). Papua New Guinea's *Criminal Code* is also known as the Griffith Criminal Code and was devised to simply and codify English common law. In addition to being adopted in the Australians state of Queensland it also forms the basis for the criminal codes of Nigeria, Israel, Fiji, the Solomon Islands and the Seychelles (MacKenzie 2002). However, until the mid-1960s, a system of legal effective bifurcation functioned, where the transplanted law 'was effectively reserved for European residents' with customary law applying elsewhere (Weisbrot 1982: 66).[15]

In the mid-1960s, in a quest for modernisation and a desire to transform society through the use of the criminal law, Professor Derham was invited to make recommendations for reform and standardisation of criminal law in Papua New Guinea, and his recommendations were adopted as official state policy in 1963. The Derham reforms had the express purpose of bringing the transplanted criminal law into effect across the entire population of the territory, a policy that continues today. Since that time, the state of Papua New Guinea has attempted to enforce a single system of state-based criminal law against all communities within that territory. The end result is the overlay of a transplanted criminal law on a pre-existing legal order – legal pluralism. While both legal orders deem activity that threatens personal security as wrongful *per se* (including murder, rape, and robbery as *common wrongs*) they have very different production technologies for providing a deterrent against such behaviour, and a pair of legal systems that are at least *de jure* incompatible with one another.

[15] 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).

Customary Law and Negative Externalities from the State

Kinship ties and reciprocity were, and are, the cornerstones of customary law in Papua New Guinea. The enforcement of customary sanctions is the primary responsibility of the person wronged and his or her inner kinship group, a principle often referred to as self-help. (Narokobi; 1996) While sanctions for wrong behaviour varied in terms of the gravity of the wrong, they also varied in terms of the identity of the perpetrator. Consistent with the principles of kinship and reciprocity, harsh and often violent punishments were reserved for outsiders of the kinship group while much less severe sanctions were reserved for those within the kinship group. (Laurence 1969) In the absence of a formal criminal justice system (and formal insurance markets more generally), kin were obliged to protect their group and to help enforce customary sanctions under the principles of reciprocity and collective responsibility (Narokobi 1996). Today, group loyalty and collective responsibility (often referred to *wontokism*) is both deep and pervasive within Papua New Guinean society (Dinnen 2010).

Payback was an essential element of the customary legal order, as it provided a high magnitude sanction. Serious wrongs such as homicide (either deliberate and accidental) could result in payback killings, either directed at the wrongdoer or someone within the wrongdoer's group, under a principle similar to group liability. (Trompf 1994) This led Narokobi (1996: 176) to conclude that in Papua New Guinea 'killing is not a crime, but a punishment'.[16]

In order to demonstrate how payback killing operates today in this jurisdiction, we report the results of our survey on the use of this sanction for both accidental and intentional wrongful

[16] Posner (1983), and Parisi and Dari-Mattiacci (2004) have provided an economic rationale for the main principles of customary law similar to those found in Papua New Guinea. They suggest that the threat of physical force and large compensation payments 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.

deaths. As can be seen in Table 1, 36% of respondents still agree with the use of payback killings in one or both of the scenarios. For an accidental death, 15% of respondents agreed with its use while 29% agreed with its use in the case of a deliberate killing. Similarly it can be also seen that the majority of respondents considered that payback killings should be treated leniently by the state regime, with 20% believing that payback killers should face no prison sentence at all.[17]

Table 1: Source of Negative Production Externalities in PNG

Payback: Respondents who report that they agree with the payback if the Homicide is -		
Homicide: Deliberate 29%	Homicide: Accidental 15%	Homicide: Any 36%
State Regulation: Respondents who report that they support the regulation of payback killings by -		
Punishment: Life Imprisonment 42%	Punishment: Reduced Sentence 38%	Punishment: No imprisonment 20%

Despite these expectations at community level, retribution remains a crime under state law which attracts the highest possible state sanctions. Indeed, state courts have announced that the death penalty applies to future payback killers. (Kelola 2010) 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

[17] In interviews conducted concurrently with the survey, the most commonly practiced customary sanction is in fact a demand for compensation, which for homicide ranges from about $8,000 to more than $40,000 depending on the site and circumstances. In a country where average annual income was approximately $1,300 in 2010, this is a considerable sum, and the assistance of an extended kinship network usually is required for resolution.

system. As Strathern (1993) concluded, removing violent retaliation from customary law is similar to removing the threat of prison under the state legal order.[18]

In summary, customary law's most potent sanction (payback) is illegal under state law, meaning that the state does not allow or acknowledge large customary sanctions as substitutes to its own sanctions. All other things equal, this implies an increasing cost of administering customary law with the level of state law enforcement. For this reason, the state criminal law imposes negative externalities on the production of enforcement under customary law, an effect that will increase with the level of state law enforcement activity, resulting in the anticipated withdrawal of enforcement efforts under the customary system.

State Criminal Law and Negative Externalities from Customary Law

Papua New Guinea's state criminal justice system is closely related to the colonial regimes from which it derives, in England and Australia. If a criminal wrong is committed, the Papua New Guinean state acts through standard police and prosecutorial agents to pursue the wrongdoer. Serious crimes, such as murder and rape, are heard by the National Court and sanctions are mostly confined to fines and imprisonment (although an unused capital punishment sanction was recently introduced).

Equality under the law is a fundamental principle, and the state criminal system relies upon its agents (police, judges and jailors) to act in an impartial manner to any individual in regard to its relations with the law. In contrast, customary law relies on strong kinship ties for its basic meaning and activity, and so many of the fundamental functions of law are meant to vary with the connectivity of the individuals involved. The incompatibility between these

[18] Furthermore, courts sometimes take large customary compensation payments into account in sentencing, normally reducing a life sentence by about two to five years (Chalmers et al 2009) weakening the incentives to comply with the customary legal order.

two principles – equality and kinship - results in the potential for substantial negative externalities between the two systems.

This fundamental incompatibility can be viewed in the results of our survey in Table 2 below, regarding the impact of kinship on the role of law. When survey respondents were asked how they would respond if they were a victim of a robbery, 45% stated that they would go to the police and 55% 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% responded that they would go to the police, while this fell further to 25% if the perpetrator was kin. Even for victims of crime, the customary legal order displaces the state as kinship relations become more important facets of the event.

The importance of kinship ties in terms of community co-operation with the state criminal system has also been highlighted by Trompf (1994:344) who cites cases of 'substitutes' doing 'gaol sentences for those considered indispensable to village activities'. Another example arises when the police themselves become subjects of payback *en bloc* by local communities following instances of homicide (including accidental cases). In this regard Trompf (1994: 338) concludes that '[f]ear of surprise payback attacks has disinclined police strategists from using the kind of grassroots methods, such as local 'beats' most likely to improve relations with urban groups'.[19] Furthermore, the Office of the Public Prosecutor (2008) explicitly rules out the possibility of using compensation payments to halt court proceedings, which reduces the incentive of those who stand to gain from a compensation

[19] Any state criminal justice system relies on community support for part of its effectiveness. Indeed, Akerlof and Yellen (1994:2) highlight the importance of community members being 'prepared to report crimes and cooperate in police investigations' in generating a deterrent effect.

payment from cooperating with the state criminal justice system (working on the basis that the compensation payment is withdrawn or lowered if the wrongdoer is jailed).[20]

One of the most significant negative externalities concerns the impact of kinship obligations upon those individuals actually working within the state enforcement agencies. When state officials put their customary (or group) obligations before their official duties it is often referred to as *wantokism* and the phenomenon is ubiquitous in Papua New Guinea (Dinnen 2010). State officials often face a stark choice in relation to their non-state and official duties.

One of the most consistent findings from the fieldwork was the perceived failure of the police to sanction serious wrongs due to *wantokism*. As can be seen from Table 2, when the respondents were asked the appropriate action of a police officer whose cousin had committed a homicide 83% stated that he should arrest his cousin, 12% stated that he should declare a conflict of interest, and only 6% 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 *wontokism* 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.

[20] See Larcom (2013) who provides evidence of the perceived substitutability of large compensation payments and imprisonment on Bougainville Island. Owing to the Autonomous Region of Bougainville's own Constitution the state also takes a more accommodating stance toward the use of compensation payments to sanction wrongs.

Table 2: Pervasiveness of Kinship Ties in Papua New Guinea

Kinship: Respondents who will report a robbery to the police if Perpetrator is -		
Perpetrator: unspecified 45%	Perpetrator: Neighbour 36%	Perpetrator: Kin 25%
Rivalrous Compliance: Police officer's response if his cousin committed a homicide -		
Arrest Him 83%	Declare Conflict of Interest 12%	Help Him Flee 6%

The pervasiveness of *wantokism* extends far beyond the police force. In a socio-anthropological study of the Bomana Maximum Security Prison (outside Port Moresby), Reed (2003: 131) notes that *wontokism* 'cuts across the division between staff and inmates' and that warders are expected to treat their *wontoks* with respect and favour them in every day dealings. He goes on to suggest that they are expected to provide them with gifts, smuggle them money or tobacco, carry uncensored messages, and privilege them when making parole recommendations. The Papua New Guinea Law and Justice Sector Secretariat (2007:11-39) reported that approximately 7% of the entire prison population escape each year.

Overall, the survey data demonstrate that payback remains a legitimate customary sanction among a sizable portion of the population while it attracts high prison sentences. The state imposes significant production costs on the customary legal order by depriving it of its most potent sanctions and refusing to recognise the role of customary compensation payments as substitute sanctions. More than half of respondents stated they would not report a grave crime to the police (robbery) and that this would decline considerably if the perpetrator were kin. For all of these reasons non-state customary obligations through kinship ties and *wontokism* impose significant enforcement costs (or reduced productivity) on state criminal enforcement activities.

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 the generation of significant production externalities. The dissonance between legal regimes makes it difficult for either one to operate effectively, and the model developed above shows that this can result in an aggregate outcome that is inferior to either acting alone. Although the intention was to provide the territory with a more modern system of criminal justice, the result instead may have been that Papua New Guinea has been placed within an institutionally-inferior transition phase of legal pluralism. Rather than substituting a superior regime for an inferior one, the outcome instead appears to be one of multiple on-going legal systems with significantly negative interactions in enforcement.

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 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 transition phase 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. 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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Appendix.

A.1 Unitised Decision Making on Enforcement.

$$\text{Max}_{p_c, p_s} D\colon\ p(p_c, p_s).S - c\ (p_c, p_s) \qquad (5)$$

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

$$p_c{}^*\colon \frac{\partial c_c}{\partial p_c} = \frac{\partial p(p_c, p_s).S}{\partial p_c} \qquad (6)$$

$$p_s{}^*\colon \frac{\partial c_s}{\partial p_s} = \frac{\partial p(p_c, p_s).S}{\partial p_s} \qquad (7)$$

Assuming that the enforcement and cost of enforcement functions are monotonic and concave with regard to regime enforcement level, i.e.

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

Then the optimal level of use of either instrument will be (by definition) a decreasing function of the level of use of the other, i.e. $dp_c/dp_s < 0$.

A2 Optimal Conditions for Instruments when Decision making is Decentralised.

For (6) the first order conditions for p_c and p_s are again:

$$p_c(p_s)^*\colon \frac{\partial c_c}{\partial p_c} = \frac{\partial p(p_c, p_s).S}{\partial p_c} \qquad (8)$$

$$p_s(p_c)^*\colon \frac{\partial c_s}{\partial p_s} = \frac{\partial p(p_c, p_s).S}{\partial p_s} \qquad (9)$$

Note in the first instance that conditions (8) and (9) are identical to (6) and (7), with the difference being the manner in which equilibrium inheres. In this instance two distinct agencies are making the elections regarding p_c, p_s. We assume that if an equilibrium obtains,

it is the Nash equilibrium, and hence we look at the reaction functions to identify how the two agencies will respond to one another's choices.

Totally differentiating the two conditions to ascertain the slopes of the reaction functions, we can determine the general nature of the relationship between the two legal orders:

$$\frac{dp_C}{dp_S} = -\frac{\frac{\partial^2 p(p_C, p_S).S}{\partial p_C \partial p_S}}{\frac{\partial^2 p(p_C, p_S).S}{\partial^2 p_C}} \qquad (10)$$

$$\frac{dp_S}{dp_C} = -\frac{\frac{\partial^2 p(p_C, p_S).S}{\partial p_S \partial p_C}}{\frac{\partial^2 p(p_C, p_S).S}{\partial^2 p_S}} \qquad (11)$$

Given the assumption of diminishing returns to enforcement effort, the denominators of both conditions are negative. If the numerators are negative in sign this implies that agents will react to one another's choice as if there is a fundamental substitutability between the choices made by either agency.

And the specification that $\frac{\partial^2 p(p_C, p_S).S}{\partial p_C \partial p_S} < 0$ and $\frac{\partial^2 p(p_C, p_S).S}{\partial p_S \partial p_C} < 0$ constitutes the basic assumption of substitutability between the instruments, for the increase in efforts supplied to one instrument reduces the optimal level of supply of efforts to the other. So long as these terms are negative, then (under either centralised choice or decentralised) the optimal response to an increase in the effort supplied under one instrument is to reduce the effort supplied via the other.

A.3 Decentralised Choice with Negative Enforcement Production Externalities

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

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

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

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

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

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

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.

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:

$$\frac{dp_C}{dp_S} = -\frac{\left[\frac{\partial^2 p(p_C,p_S)}{\partial p_C \partial p_S} . S - \frac{\partial^2 c_C(p_S,p_C)}{\partial p_C \partial p_S}\right]}{\left[\frac{\partial^2 p(p_C,p_S)}{\partial^2 p_C} . S - \frac{\partial^2 c_C(p_S,p_C)}{\partial^2 p_C}\right]} \qquad (16)$$

$$\frac{dp_S}{dp_C} = -\frac{\left[\frac{\partial^2 p(p_C,p_S)}{\partial p_S \partial p_C} . S - \frac{\partial^2 c_S(p_C,p_S)}{\partial p_S \partial p_C}\right]}{\left[\frac{\partial^2 p(p_C,p_S)}{\partial^2 p_S} . S - \frac{\partial^2 c_S(p_S,p_C)}{\partial^2 p_S}\right]} \qquad (17)$$

We are investigating the issue of whether the efforts remain substitutes under this formulation, i.e. does dpc/dps < 0 ? First the denominators of (16) and (17) are negative on account of the assumption of the concavity of the production function. Then, the entire fraction will remain negative to the extent that the numerators are negative. This requires that the cross-partials are negative. That is, the condition for the instruments remaining as basic substitutes is that:

$$\frac{\partial^2 p(p_C,p_S)}{\partial p_S \partial p_C} . S - \frac{\partial^2 c_S(p_C,p_S)}{\partial p_S \partial p_C} < 0 \qquad (18)$$

The negativity of this expression will be less than when there are no negative production externalities, as only the second term in the above expression will exist in that case. And if negative production externalities are present, then by definition the first term of equation (18) is positive, reducing the negativity of the overall expression.