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**DOI**

[10.1093/ojls/gqv004](https://doi.org/10.1093/ojls/gqv004)

**Publication date**

2015

**Document Version**

Final published version

**Published in**

Oxford Journal of Legal Studies

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**Citation for published version (APA):**

Dari-Mattiacci, G., & Guerriero, C. (2015). Law and culture: a theory of comparative variation in bona fide purchase rules. *Oxford Journal of Legal Studies*, 35(3), 543-574.

<https://doi.org/10.1093/ojls/gqv004>

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# *Law and Culture: A Theory of Comparative Variation in Bona Fide Purchase Rules*

Giuseppe Dari-Mattiacci\* and Carmine Guerriero<sup>†,‡</sup>

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**Abstract**—A key question in comparative law is why different legal systems provide different legal solutions for the same problem. To answer this question, we use novel comparative evidence on how the conflict between the dispossessed original owner and the bona fide purchaser of a stolen good is resolved in different countries. This is the most primitive manifestation of a fundamental legal choice: the balance between the protection of the owner's property rights and the enhancement of the buyer's reliance on contracts. We test four prominent theories: functional equivalence, legal origins, political economics and cultural economics. We find that a culture of self-reliance is the key determinant of comparative variation in this area of law.

**Keywords:** culture, comparative variation, legal origins, functional equivalence, good faith purchase

## 1. *Introduction*

Why do different legal systems adopt different legal rules dealing with the same problem? This is a fundamental question in comparative law.<sup>1</sup> Yet there

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<sup>‡</sup> The authors would like to thank the editor Anne Davies, two anonymous referees, Bruce Ackerman, Bart de Boer, Richard Brooks, Alon Cohen, Gerrit De Geest, Ulle Endriss, Raquel Fernández Rovira, Tom Ginsburg, Davide Grossi, Kees Hengeveld, Christine Jolls, Naomi Lamoreaux, Amnon Lehavi, Saul Levmore, Amir Licht, Katerina Linos, Yoram Margalioth, Ugo Mattei, Ariel Porat, Mathias Siems, Jan Smits, Holger Spamann, Stefan Voigt and the participants of the 2012 ISLE conference at the University of Rome 3, the 2013 Ius Commune conference in Maastricht, the 2014 CLEF conference at Columbia Law School, and the seminars at Tel Aviv University and Hokkaido University for insightful comments. The authors would also like to thank Lauren Abbott, John O'Hara, Anghel Negriu and Sander Verrips for excellent research and editorial assistance. This project would not have been possible without the contribution of 148 teams of country experts, whose names are listed in the Appendix, and of Arthur Salomons, with whom we drafted the questionnaire. We are deeply thankful for their efforts.

is no consensus as to whether these differences are substantial or merely superficial, nor about their causes.<sup>2</sup> Among the theories that have been proposed, it is possible to identify four main clusters: functional equivalence, legal origins, political economics and cultural economics. The first approach stresses the functional equivalence among different legal rules and ascribes residual divergence to the idiosyncratic preferences of the lawmaker. In contrast, the other approaches view the differences among legal systems as substantial and attribute them to a transplantation process mainly due to colonisation, to different features of the political system, or to different cultural backgrounds.

The present article informs this debate by empirically testing these four theories on a specific legal issue: the conflict between the dispossessed owner and the bona fide purchaser for value of stolen personal property, that is, movable goods in civil law parlance. While our empirical findings only apply to this specific context, the conflict between dispossessed owners and bona fide purchasers is the most primitive manifestation of a much more general and fundamental legal problem that every legal system, from the code of Hammurabi, the Talmud and ancient Greek and Roman law to modern civil and common law systems, has felt the need to address explicitly:<sup>3</sup> the balance between protecting property rights and enhancing reliance on contracts, which we call the ‘property–contract balance’.<sup>4</sup>

<sup>1</sup> R Sacco, ‘Legal Formants: A Dynamic Approach to Comparative Law II’ (1991) 39 Am J Comp L 343, 390 (‘[r]esearch into the cause of variations in legal rules is, in part, the job of the sociologist. It becomes the job of the jurist as well, however, whenever the cause of variation in the rule depends on its nature or contents’); A Ogus, ‘Competition Between National Legal Systems: A Contribution of Economic Analysis to Comparative Law’ (1999) 48 Int’l & Comp LQ 405; J Gordley, *Foundations of Private Law* (OUP 2006) 42.

<sup>2</sup> S Levmore, ‘Rethinking Comparative Law: Variety and Uniformity in Ancient and Modern Tort Law’ (1986) 61 Tul L Rev 235, 237; Sacco, ‘Legal Formants’ (n 1) 390–401; R Sacco, ‘Diversity and Uniformity in the Law’ (2001) 49 Am J Comp L 171; Gordley, *Foundations of Private Law* (n 1).

<sup>3</sup> S Levmore, ‘Variety and Uniformity in the Treatment of the Good-Faith Purchaser’ (1987) 16 JLS 43; G Thür, ‘Transaction Cost in Athenian Law’ in U Yiftach-Firanko, DP Kehoe and DM Ratzan (eds), *Law and Transaction Costs in the Ancient Economy* (University of Michigan Press, forthcoming).

<sup>4</sup> JG Sauveplanne, ‘The Protection of the Bona Fide Purchaser of Corporeal Movables in Comparative Law’ (1965) 29 Rabels Z 651. cf the notion of ‘certainty of rights’ versus ‘certainty of transactions’ in V Ehrenberg, *Rechtssicherheit und Verkehrssicherheit: mit besonderer Rücksicht auf das Handelsregister* (Fisher 1904); the notion of ‘static security’ versus ‘dynamic security’ in R Demogue, *Les notions fondamentales du droit privé: essai critique* (Rousseau 1911). See also G Petrelli, ‘L’autenticità del titolo della trascrizione nell’evoluzione storica e nel diritto comparato’ (2007) 53 Rivista di diritto civile 585, 588. Note that the notion of property–contract balance is different from the ‘property–contract interface’ discussed in TW Merrill and HE Smith, ‘The Property/Contract Interface’ (2001) 101 Colum L Rev 773, where property (*in rem* rights) and contract (*in personam* rights) are analysed as two alternative modalities of rights. In contrast, in our analysis property and contract are defined differently and they are shown to interact. For additional examples of the property–contract balance see K Ayotte and P Bolton, ‘Optimal Property Rights in Financial Contracting’ (2011) 24 Rev Fin Stud 3401 and B Arruñada, *Institutional Foundations of Impersonal Exchange* (University of Chicago Press 2012). The importance of the problem that we study is exemplified by the size of the market for stolen goods; see LJ Borodkin, ‘The Economics of Antiquities Looting and a Proposed Legal Alternative’ (1995) 95 Colum L Rev 377; AA Montagu, ‘Recent Cases on the Recovery of Stolen Art—The Tug of War Between Owners and Good Faith Purchasers Continues’ (1993) 18 Colum-VLA JL & Arts 75; A Schwartz and RE Scott, ‘Rethinking the Laws of Good Faith Purchase’ (2011) 111 Colum L Rev 1332, 1334 (‘[t]he annual national and international trade in stolen and misappropriated goods is in the billions of dollars’).

Before asking *why* there is comparative variation, we need to show *that* there is comparative variation. This issue is surprisingly unsettled.<sup>5</sup> Using a novel and comprehensive cross-country dataset, we document and measure the extent to which legal systems diverge in the protection of the original owner versus the bona fide purchaser. Adding to the growing literature on quantitative comparative law,<sup>6</sup> our measurement exercise is based on several indicators gauging the number of years after which the buyer is immune from the owner's claims under a variety of circumstances. In the case of private sales, while in the United States the original owner of stolen personal property can virtually always reclaim it from the bona fide purchaser under the 'theft rule',<sup>7</sup> he or she can only do so within 30 years in South Africa.<sup>8</sup> This term is reduced to ten years in Germany,<sup>9</sup> eight years in Russia,<sup>10</sup> six years in England and

<sup>5</sup> Levmore, 'Variety and Uniformity' (n 3) 45 and JH Merryman, 'The Good Faith Acquisition of Stolen Art' in J Jackson, M Langer and P Tillers (eds), *Crime, Procedure and Evidence in a Comparative Context: Essays in Honour of Professor Mirjan Damaska* (Hart 2008) 275 stress that there is substantial divergence. In contrast, DE Murray, 'Sale in Market Overt' (1960) 9 Int'l & Comp LQ 24 and WM Landes and RA Posner, 'The Economics of Legal Disputes over the Ownership of Works of Art and Other Collectibles' in VA Ginsburgh and P-M Menger (eds), *Economics of the Arts* (NH 1976) 177 consider the rules in force in different countries as substantially homogeneous. Disagreement also reigns as to whether comparative variation is desirable; some authors answer in the positive: H Demsetz, 'Towards a Theory of Property Rights' (1967) 57 Am Econ Rev 347; RA Posner, 'A Theory of Primitive Society, with Special Reference to Law' (1980) 23 JL & Econ 1; MJ Bailey, 'Approximate Optimality of Aboriginal Property Rights' (1992) 35 JL & Econ 183; other authors cast their votes for uniformity: A Kurjatko, 'Are Finders Keepers? The Need for a Uniform Law Governing the Rights of Original Owners and Good Faith Purchasers of Stolen Art' (1989) 5 UC Davis J Int'l L and Pol 59; PY Reyhan, 'A Chaotic Palette: Conflict of Laws in Litigation between Original Owners and Good-Faith Purchasers of Stolen Art' (2001) 50 Duke LJ 955; Schwartz and Scott (n 4) 1338. cf RA Epstein, 'The Static Conception of the Common Law' (1980) 9 JLS 253, 254.

<sup>6</sup> MW Reiman, 'The Progress and Failure of Comparative Law' (2002) 50 Am J Comp L 671, 685–86; MM Siems, 'Numerical Comparative Law: Do We Need Statistical Evidence in Law in Order to Reduce Complexity?' (2005) 13 Cardozo J Int'l & Comp L 521; MM Siems, 'Statistische Rechtsvergleichung' (2008) 72 *Rechtszeitschrift* 354; H Spamann, 'Large-Sample, Quantitative Research Designs for Comparative Law?' (2009) 57 Am J Comp L 797; R Michaels, 'Comparative Law by Numbers? Legal Origins Thesis, Doing Business Reports, and the Silence of Traditional Comparative Law' (2009) 57 Am J Comp L 765. On the use of reduced models in comparative law see G Hadfield, 'The Strategy of Methodology: The Virtues of Being Reductionist for Comparative Law' (2009) 59 U Toronto LJ 223. Many recent articles use statistics in comparative law: D Berkowitz, K Pistor and J-F Richard, 'The Transplant Effect' (2003) 51 Am J Comp L 163; SA Davydenko and JR Franks, 'Do Bankruptcy Codes Matter? A Study of Defaults in France, Germany, and the UK' (2008) 58 J Fin 565; N Garoupa and T Ginsburg, 'Guarding The Guardians: Judicial Councils and Judicial Independence' (2009) 57 Am J Comp L 103; J Armour and others, 'How Do Legal Rules Evolve? Evidence from a Cross-Country Comparison of Shareholder, Creditor, and Worker Protection' (2009) 57 Am J Comp L 579; D Halberstam and MW Reimann, 'Federalism and Legal Unification: A Comparative Empirical Investigation of 20 Systems' (2010) <www.ssrn.com/abstract=1557690> accessed 13 July 2014; DS Law and M Versteeg, 'The Evolution and Ideology of Global Constitutionalism' (2011) 99 Cal L Rev 1163; P Gahan and others, 'Economic Globalization and Convergence in Labor Market Regulation: An Empirical Assessment' (2012) 60 Am J Comp L 703; M Gelter and MM Siems, 'Language, Legal Origins, and Culture before the Courts: Cross-Citations between Supreme Courts in Europe' (2013) 21 Sup Ct Econ Rev 215. This literature fits in the broader cadre of comparative law and economics, see U Mattei, *Comparative Law and Economics* (University of Michigan Press 1997); U Mattei and A Monti, 'Comparative Law and Economics: Borrowing and Resistance' (2001) 1 *Global Jurist Frontiers* 1; R Michaels, 'The Second Wave of Comparative Law and Economics?' (2009) 59 U Toronto LJ 197.

<sup>7</sup> Uniform Commercial Code, ss 1–103.

<sup>8</sup> Prescription Act 68 1959, art 1.

<sup>9</sup> German Civil Code, ss 935 and 937.

<sup>10</sup> Civil Code of the Russian Federation, arts 196, 234 and 302.

Wales,<sup>11</sup> five years in Turkey,<sup>12</sup> and three years in France,<sup>13</sup> while in Italy the purchaser is immediately protected.<sup>14</sup> Figure 1 provides a visual representation of the distribution of these terms of years (the variable named *Property–Private*) around the world.

Because of this large amount of comparative variation, rules concerning the bona fide purchase of stolen goods are naturally suited to address empirically our primary question: why is there comparative variation? Following the lead of Amir Licht, Chanan Goldschmidt and Shalom Schwartz and building on a long legacy of cross-cultural psychology and economics,<sup>15</sup> we document a relationship between law and prevalent cultural values. In particular, we find that jurisdictions in which individuals display a stronger culture of morality, embodied by stronger norms of trust and respect for others, as self-reported to the World Value Study and the European Value Survey up to the 2008 (the variable named *Culture*),<sup>16</sup> exhibit stronger owner protection. In addition, jurisdictions in which there is stronger enforcement of the law, as measured by the number of police personnel and professional judges per 100,000 inhabitants over the 1973–2009 period (the variable named *Enforcement*),<sup>17</sup> exhibit weaker owner protection. While the left graph of Figure 2 depicts the positive relationship linking *Property–Private* and *Culture*, once the role of *Enforcement* is

<sup>11</sup> Sale of Goods Act 1979, s 21; Limitation Act 1980, ss 2–5.

<sup>12</sup> Turkish Civil Code, art 989.

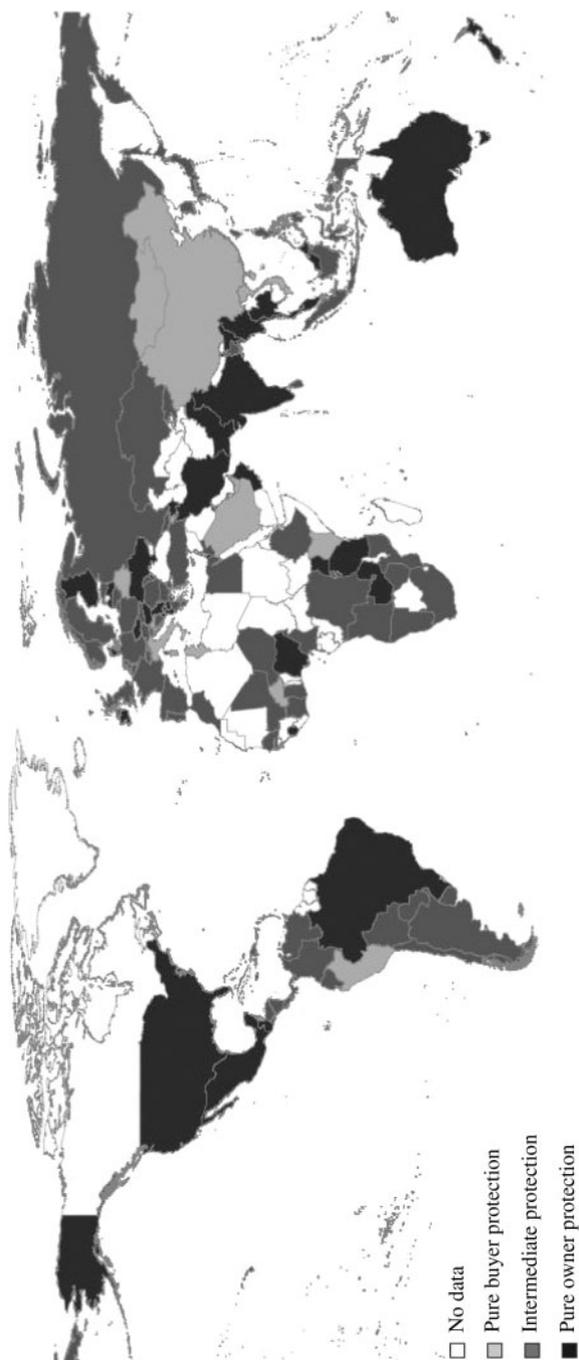
<sup>13</sup> French Civil Code, art 2276.

<sup>14</sup> Italian Civil Code, art 1153.

<sup>15</sup> AN Licht, C Goldschmidt and SH Schwartz, 'Culture, Law, and Corporate Governance' (2005) 25 *Int'l Rev L & Econ* 229 is the first article to link the law in the books to culture. See further, G Hofstede, GJ Hofstede and M Minkov, *Cultures and Organizations: Software of the Mind* (3rd edn, McGraw-Hill 2010); SH Schwartz, 'Cultural Value Differences: Some Implications for Work' (1999) 48 *App Psych Int'l Rev* 23; G Tabellini, 'Institutions and Culture' (2008) 6 *J Eur Econ A* 255; Y Gorodnichenko and G Roland, 'Culture, Institutions and the Wealth of Nations' (2010) <[http://eml.berkeley.edu/~ygorodni/gorrol\\_culture.pdf](http://eml.berkeley.edu/~ygorodni/gorrol_culture.pdf)> accessed 14 July 2014; CR Williamson and CB Kerekes, 'Securing Private Property: Formal versus Informal Institutions' (2011) 54 *JL Econ* 537; S Beugelsdijk and R Maseland, *Culture in Economics* (CUP 2011); A Greif, 'Cultural Beliefs and the Organization of Society: A Historical and Theoretical Reflection on Collectivist and Individualist Societies' (1994) 102 *J Pol Econ* 912; S Rose-Ackerman, 'Corruption' in P Newman (ed), *The New Palgrave Dictionary of Economics and the Law* (Macmillan 1998); D Lal, *Unintended Consequences: The Impact of Factor Endowments, Culture, and Politics on Long-Run Economic Performance* (MIT 1999); RM Stulz and R Williamson, 'Culture, Openness, and Finance' (2003) 70 *J Fin Econ* 313; T Beck, A Demirgüç-Kunt, and R Levine, 'Law, Endowments, and Finance' (2003) 70 *J Fin Econ* 137; G Roland, 'Understanding Institutional Change: Fast-Moving and Slow-Moving Institutions' (2004) 38 *Stud Comp Int'l Dev* 109; P Aghion and others, 'Regulation and Distrust' (2010) 125 *QJ Econ* 1015; J Granado, R Inglehart and D Leblang, 'The Effect of Cultural Values on Economic Development: Theory, Hypothesis and Some Tests' (1996) 40 *Am J Pol Sci* 367; L Guiso, P Sapienza and L Zingales, 'Does Culture Affect Economic Outcomes?' (2006) 20 *J Econ Persp* 23.

<sup>16</sup> The World Value Survey was carried out in five waves in 1981–82, 1989–90, 1994–95, 1999–2000, and 2005–06; the European Value Study was carried out in four waves in 1981, 1990, 1999 and 2008. See R Inglehart, *World Values Surveys and European Values Surveys, 1981–1984, 1990–1993, 1995–1997 and 2005–2006* (Institute for Social Research 2010).

<sup>17</sup> See UNODC, *The Tenth United Nations Survey of Crime Trends and Operations of Criminal Justice Systems* (2006) <<http://www.unodc.org/documents/data-and-analysis/statistics/data.html>> accessed 1 November 2012. Estimates do not substantially differ if one uses instead the International Country Risk index or the efficiency measures collected by S Djankov and others, 'Courts' (2003) 118 *QJ Econ* 453, concerning the length of procedures to collect a commercial debt or a bounced cheque. The total personnel of police has been shown to have an effect on low enforcement and, in particular, to reduce crime; see SD Levitt, 'Understanding Why Crime Fell in the 1990s: Four Factors That Explain the Decline and Six That Do Not' (2004) 18 *J Econ Persp* 163.



**Figure 1.** Owner Protection in Private Sales Around the World (sample size: 126)

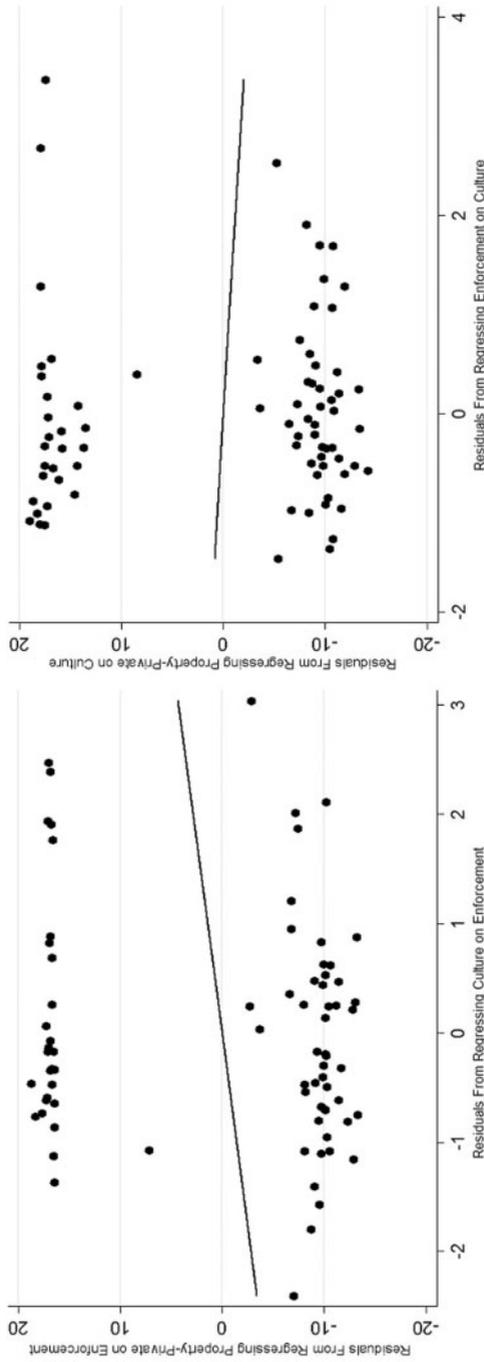


Figure 2. Effects of Culture and Enforcement on Owner Protection in Private Sales (sample size: 77)

considered, the right graph of Figure 2 displays the negative link existing between *Property–Private* and *Enforcement* once *Culture* is taken into account.

An explanation for these patterns is that in developed markets buyers tend to value goods more than their original owners and, thus, society faces a trade-off between the basic need of safeguarding the original owners' property and leaving some stolen goods in the hands of those who value them the most, that is, the buyers. Since a culture of morality assures that most transactions are legal, condoning some non-consensual transfers is less useful. Similarly, stronger law enforcement raises the number of goods that are returned to low-valuing owners and hence needs to be counterbalanced by weaker owner protection. In a companion paper written with Zhenxing Huang, we develop a formal version of this value-based theory and explore its relation with the incentive theory.<sup>18</sup>

Although these correlations are suggestive, they could be due to reverse causation, that is, it could be the law that affects a culture of morality and the strength of enforcement rather than the other way around.<sup>19</sup> Therefore, we need to focus on fundamental, yet measurable features of a country's culture that affect the law but are unlikely to be affected by it. Basic features of languages, such as pronoun usages, have been shown to embed fundamental characteristics of the speaker's culture and hence can be substituted to our two cultural dimensions in our empirical analysis. Amnon Lehari and Amir Licht were the first to use this approach to study property law.<sup>20</sup> The two features of language that we will use in the analysis are 'pronoun drop' and 'pronoun difference'. Pronoun drop refers to the possibility of dropping the first person pronoun, which is not allowed in English, where 'I' must accompany the verb. Pronoun difference refers to the use of formal and informal second person pronouns, such as 'ye' and 'thou' in early English or 'tu' and 'vous' in French. These language features are statistically related to the cultural variables in which we are interested: pronoun drop is typical of societies that emphasise individual freedom less and in which, therefore, trust and respect for others are more limited, whereas pronoun difference is typical of societies accommodating hierarchical control and, in turn, stronger law enforcement.<sup>21</sup>

<sup>18</sup> See G Dari-Mattiacci, C Guerriero and Z Huang, 'The Property–Contract Balance' (manuscript on file with the authors, 2014).

<sup>19</sup> Social norms may affect rules or the other way around: RC Ellickson, *Order Without Law* (Harvard University Press 1994); U Gneezy and A Rustichini, 'A Fine is a Price' (2000) 29 JLS 1; JI Siegel, AN Licht and SH Schwartz, 'Why Peoples Obey the Law' (2008) 4 Rev L & Econ 715; J Klick, 'The Perils of Empirical Work on Institutions' (2010) J Inst'l & Theo Econ 166.

<sup>20</sup> A Lehari and A Licht, 'BITS and Pieces of Property' (2011) 36 Yale J Int'l L 115. Their study concerns the protection of property as such and not the property–contract balance. Our results on adverse possession (reported in the Appendix) confirm their results.

<sup>21</sup> We combine two well-known approaches: GH Hofstede, *Culture's Consequences: International Differences in Work-Related Values* (Sage 1980) (classifying culture along the individualism–collectivism dimension); SH Schwartz, 'Beyond Individualism/Collectivism: New Cultural Dimensions of Values' in K Uichol and others (ed), *Individualism and Collectivism: Theory, Method, and Applications* (Sage 1994) (classifying culture along the hierarchy–egalitarianism dimension). See also JI Siegel, AN Licht and SH Schwartz, 'Egalitarianism and International Investment' (2011) 102 J Fin Econ 621. We formally test the first stage relationship linking on the one hand culture to pronoun drop and on the other hand enforcement and pronoun difference in the Appendix.

Therefore, instead of employing culture directly, we can rely on its exogenous determinants and so avoid reverse causality. To make the analysis easier to follow, it is useful to condense the two grammatical features in a single dimension that we call *self-reliance*. This is high if a language has no pronoun drop (high trust and respect) and no pronoun difference (weak enforcement) and low in the opposite case. Intermediate levels of self-reliance correspond to cases in which only one of the two language features is present. Figure 3 provides a snapshot of self-reliance around the world as measured by pronoun use.

Essentially, our empirical investigation aims at statistically establishing a relationship between the data depicted in Figure 1 and the data depicted in Figure 3. Section 2 provides the building blocks of our empirical analysis. In 2A, we offer a detailed description both of the method of collecting the data and of their features. In 2B, we illustrate the theoretical background of the analysis and offer a rationale for the relationship between bona fide purchase rules and culture. In 2C we formulate our hypothesis. In 2D, we document the relationship between language and culture and substantiate our choice of language as a proxy for culture. In 2E, we offer a historical argument to support our claim that differences in culture cause differences in law.

Section 3 contains our comparative exercise. In 3A to 3C, we compare the explanatory power of culture with that of the functional equivalence theory, the legal origins theory and two political economy theories, respectively. In 3D, we introduce a competing cultural trait based on religion and contrast it with our self-reliance explanation. Our empirical results document that countries with a higher degree of self-reliance tend to exhibit a higher degree of owner protection. For example, the United States has a higher degree of both self-reliance and owner protection than Italy.<sup>22</sup> Furthermore, self-reliance consistently provides a better explanation than competing theories. In section 4, we conclude with a brief description of an interdisciplinary research agenda on comparative variation and legal harmonisation. The data, the codes and additional robustness results are available in an online Appendix.<sup>23</sup>

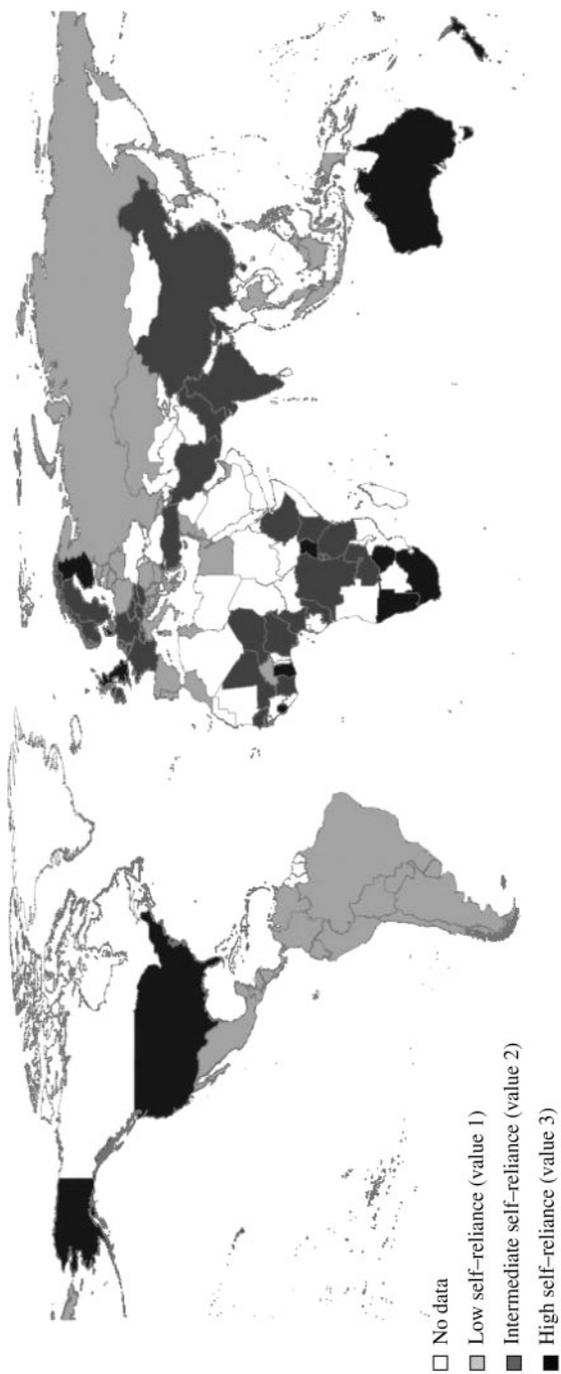
## 2. *Innocent Purchase of Stolen Goods*

### A. *The Data*

The conflict arising between the original owner and the bona fide purchaser of a stolen movable good is an ideal case to study because it is at the heart of

<sup>22</sup> See Appendix.

<sup>23</sup> The Appendix is available on the journal website as well as at <<https://sites.google.com/site/carmineguerrieroshomepage/home/research-1>> accessed 18 January 2015.



**Figure 3.** Self-reliance Around the World (sample size: 107)

private law in any legal system that recognises private property.<sup>24</sup> The problem can be easily defined in factual terms, given that the notions of ‘stolen movable good’ and ‘purchase for value’ are rather uniformly understood. There is a natural measure for the degree of protection that a legal system affords to owners versus buyers: the number of years after which an innocent purchaser acquires ownership of a stolen good. The longer this period, the more protected the original owner. We focus on cases in which the good is stolen and immediately resold, so as to avoid the problem of determining whether this term of years starts running from the moment of theft or from the purchase.

This information has been collected with the help of 148 teams of experts in 126 jurisdictions, whose names are listed in the Appendix.<sup>25</sup> These experts are renowned professors of private (mostly property) law in one of the leading universities of their respective jurisdictions, or practitioners in prominent international law firms. A large fraction of them have already participated in comparative projects. The experts were asked to provide a detailed answer to the following main question and a number of follow-up questions:<sup>26</sup> ‘At what conditions does a good faith buyer acquire ownership of a stolen good?’<sup>27</sup> From their answers, we distilled the relevant conditions and constructed indexes of owner protection concerning the bona fide purchase for value without notice of stolen personal property through a private sale, in a public market, from a professional seller, and in an auction. In each case, we also recorded information as to whether the party who has the right to retain the good is required to pay compensation to the other party. While none of the countries in our sample conditions a buyer’s ownership claim to the payment of compensation to the original owner, many countries have the opposite rule, requiring the owner to compensate the buyer if he or she reclaims the good.<sup>28</sup>

<sup>24</sup> For a review of the rules in force in Europe see B Lurger (ed), *Rules for the Transfer of Movables in Europe* (SELP 2008) and B Lurger (ed), *National Reports on the Transfer of Movables in Europe* (6 vols, SELP 2010); AF Salomons, ‘On the Economics of Good Faith Acquisition Protection in the DCFR’ in A Somma (ed), *The Politics of the Draft Common Frame of Reference* (Kluwer 2009) 199; AF Salomons, ‘Comparative Law and the Quest for Optimal Rules on the Transfer of Movables for Europe’ (2013) 2 *Eur Prop LJ* 54.

<sup>25</sup> We refer to jurisdictions since we differentiate among England and Wales, Northern Ireland and Scotland. The data also contains Canada, which was excluded from the statistical analysis because we only have information on Quebec.

<sup>26</sup> The questionnaire was drafted by Giuseppe Dari-Mattiacci, Carmine Guerriero and Arthur Salomons, while the data was collected by Giuseppe Dari-Mattiacci and Carmine Guerriero.

<sup>27</sup> In doing so we aimed at accounting not only for the legal rules in force but also for the way in which such rules are applied in practice as a result of the complex interaction of the different legal formants. See Sacco, ‘Legal Formants’ (n 1) 21, 27–30; PG Monateri, ‘Methods in Comparative Law: An Intellectual Overview’ in PG Monateri (ed), *Methods of Comparative Law* (Elgar 2012) 7; BC Canon and L Baum, ‘Patterns of Adoption of Tort Law Innovations: An Application of Diffusion Theory to Judicial Doctrines’ (1981) 75 *Am Pol Sci Rev* 975.

<sup>28</sup> This rule amounts to an option for the owner to buy back his good and has a long history: it was included in the Code of Hammurabi, in Germanic law, in Burgundian and Visigothic law, while Hebraic laws gave the owner an option to buy back as long as he had not abandoned hope of locating his property, see Murray (n 5) 29, 82–88; B Kozolchyk, ‘Transfer of Personal Property by a Nonowner: Its Future in Light of Its Past’ (1987) 61 *Tul L Rev* 1453, 1484–85. Consequently, the buyer might be protected with a property rule (if the buyer can retain the good) or a liability rule (if the buyer receives compensation instead of the entitlement). The owner is always protected with a property rule instead (if protected at all): G Calabresi and AD Melamed, ‘Property Rules, Liability Rules, and Inalienability: One View of the Cathedral’ (1972) 85 *Harv L Rev* 1089.

The amount of compensation is equal either to the purchase price or to the market price of the good. In addition, we collected information about the definition of good faith—subjective (‘did not know’) or objective (‘did not know and ought not to have known’)—and about whether good faith is presumed or must be proven by the buyer.

Finally, we also recorded background rules of adverse possession (also including acquisitive prescription) for personal property and statutes of limitation for the remedies available to the owner. These rules resolve the more general conflict between the original owner and a possessor of personal property. They are not always directly applicable to the innocent purchase of stolen goods, since adverse possession is often excluded for stolen goods. Moreover, statutes of limitations often run from the moment at which the owner has or could have reasonably located the good. Yet, in other cases, these rules are directly relevant because the general adverse possession term applies also to stolen goods or because the statute of limitations starts running from the moment of theft. In such cases, we have taken these rules into account while constructing our other indexes of owner protection.

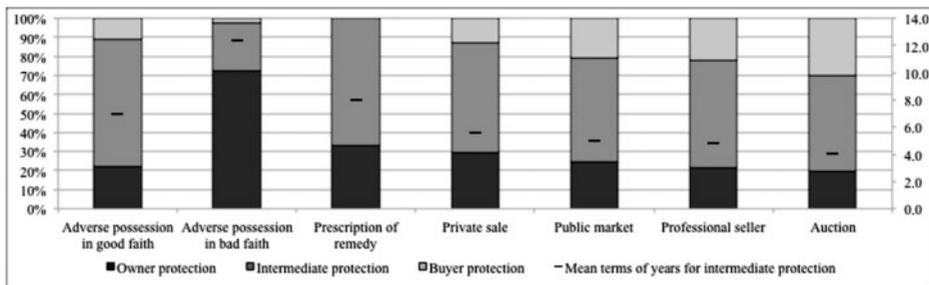
Table 1 provides a snapshot of the indexes for owner protection for the four countries that we use as examples. As anticipated, a larger term of years indicates stronger owner protection (and hence weaker buyer protection). ‘Never’ implies pure owner protection,<sup>29</sup> while a value equal to zero implies the complete protection of the bona fide purchaser who acquires ownership immediately at the moment of the purchase. Figure 4 offers an overview of our data. The first three indexes refer to general property law rules, while the last four indexes are specific to the case of the innocent purchase of stolen goods. For each index, we report the shares of jurisdictions with pure owner protection (the buyer never acquires ownership or the remedy for the owner never expires), pure buyer protection (the buyer acquires ownership immediately), and intermediate protection (the buyer acquires ownership after a term of years), as measured on the left-hand axis. We also report the mean term of years for the jurisdictions belonging to the intermediate group, as measured on the right-hand axis. The figure shows substantial comparative variation in each of the indexes. The largest group of countries affords original owners intermediate protection.<sup>30</sup> Adverse possession is more frequently available and requires fewer years if the possessor is in good faith. Finally, good faith

<sup>29</sup> It is necessary for the empirical analysis to assign a finite number of years to the case ‘never’. In the following sections, we report the results for the analysis with ‘never’ equal to thirty years (the highest term of years for the jurisdictions in the intermediate group). The message of our empirical exercise is not very different when we substitute either 70 years or the life expectancy at birth in the jurisdiction for ‘never’.

<sup>30</sup> The standard deviation within the intermediate protection countries is 7.4 (adverse possession in good faith), 9.2 (adverse possession in bad faith), 8.6 (prescription of the owner’s remedy), 6.5 (owner protection in private sales), 5.8 (owner protection in markets), 5.8 (owner protection with professional seller) and 4.0 (owner protection in auctions).

**Table 1.** Measures of Relative Owner Protection in Four Countries

	Denmark	France	Italy	Turkey
General term of adverse possession in good faith (years)	Never	3	0	5
General term of adverse possession in bad faith (years)	Never	Never	20	Never
Definition of good faith	Objective	Subjective	Subjective	Objective
Presumption of good faith	No	Yes	Yes	Yes
General term of prescription of the owner’s remedy (years)	Never	3	Never	5
Owner protection in private sales (years)	Never	3	0	5
Owner protection in public markets, with professional sellers and in auctions (years)	Never	3	0	5
Pro-buyer liability rule	No	Purchase price	No	Market price



**Figure 4.** Share of Jurisdictions with Pure Owner, Intermediate or Pure Buyer Protection in Private Sales (bars) and Mean Number of Years in Jurisdictions with Intermediate Protection (dashes) (sample size: 126)

buyers of stolen goods are protected more often and more strongly if they purchase in a market, from a professional seller or in an auction than if they purchase through a private sale (a generalisation of the market overt rule).

Focusing on cases in which the owner can reclaim the good from a bona fide purchaser (even if there is a term of years; thus, excluding only cases in which there is complete protection of the good faith buyer), the data shows that a majority of the jurisdictions (82% of 110 jurisdictions in case of private sales and 61% of 103 jurisdictions in case of markets, professional sellers or auctions) do not require compensation. Among those requiring compensation,

the measure is in most cases the purchase price (14% in case of private sales and 31% in case of markets, professional sellers or auctions) rather than the market price (5% in case of private sales and 8% in case of markets, professional sellers or auctions). Note that compensation is less frequently required for private sales (19%) than in case of transactions occurring in markets, professional sellers or auctions (40%).

The data also provides information on the definition of good faith and whether it is presumed, limitedly to those jurisdictions where the notion of good faith has a clear definition in the law or in judicial practice (120 jurisdictions). These jurisdictions are almost equally split between objective (46%) and subjective (54%) good faith, whereas in most cases (77%) good faith is presumed.

### B. *Competing Theoretical Approaches: Incentives Versus Value*

The purchase of stolen goods is particularly interesting because the thief is commonly insolvent or not easy to find and hence a court typically needs to adjudicate the case between two equally innocent parties: the dispossessed original owner and the innocent buyer.<sup>31</sup> Although our aim is primarily empirical, it is instructive to illustrate the theoretical background of our exercise. The literature has proposed two approaches to explain the allocation of the good *ex post*.<sup>32</sup> One approach views the *ex post* allocation of the contested good as a way to provide incentives to owners and buyers.<sup>33</sup> In a

<sup>31</sup> Levmore, 'Variety and Uniformity' (n 3) 45–6; Merryman, 'The Good Faith' (n 5) 277; A Hawkins, RA Rothman and DB Goldstein, 'A Tale of Two Innocents: Creating an Equitable Balance Between the Rights of Former Owners and Good Faith Purchasers of Stolen Art' (1995) 64 *Fordham L Rev* 49, 50; AJ Casner and WB Leach, *Cases and Text on Property* (Little, Brown & Co 1950) 179; M Mautner, "'The Eternal Triangles of Law": Toward a Theory of Priorities in Conflicts Involving Remote Parties' (1991) 90 *Mich L Rev* 95, 96; A Ogus, *Costs and Cautionary Tales* (Hart 2006) 45.

<sup>32</sup> Some authors have argued that buyer protection is necessary for trade: W Blackstone, *Commentaries on the Laws of England*, vol 2 (Clarendon 1769) 449; Sauveplanne (n 4) 652; R Yaron, 'Reflections on Usucapio' (1967) 35 *Tijdschrift voor Rechtsgeschiedenis* 191, 223; Kozolchik (n 28) 1481. Another strand of the literature stresses the importance of owner protection to discourage theft: HR Weinberg, 'Sales Law, Economics, and the Negotiability of Goods' (1980) 9 *JLS* 569; KT Burke, 'International Transfers of Stolen Cultural Property: Should Thieves Continue to Benefit from Domestic Laws Favoring Bona Fide Purchasers' (1990) 13 *Loy LA Int'l & Comp LJ* 427; SF Grover, 'The Need for Civil-Law Nations to Adopt Discovery Rules in Art Replevin Actions: A Comparative Study' (1992) 70 *Tex L Rev* 1431; SA Bibas, 'The Case Against Statutes of Limitations for Stolen Art' (1994) 9 *JLS* 569; cf Merryman, 'The Good Faith' (n 5) 281. Other criteria have also been proposed: Levmore, 'Variety and Uniformity' (n 3) 47 (considering risk allocation); Landes and Posner (n 5) 188, 206–09 (considering the incentives for the buyer to conceal stolen goods); A Schwartz and RE Scott, *Commercial Transactions, Principles and Policies* (Found 1982) 510–12 (considering corrective justice along with discouraging of theft); Merrill and Smith (n 4) 840 (arguing that buyer protection means protecting the party with less information and inducing the party with more information to provide notice); A Bell and G Parchomovsky, 'A Theory of Property' (2005) 90 *Cornell L Rev* 531 (arguing that protecting the owner serves to protect the stability of ownership).

<sup>33</sup> This can be considered the dominant approach; see Levmore, 'Variety and Uniformity' (n 3) 46 and A Ogus, 'What Legal Scholars Can Learn From Law and Economics' (2004) 79 *Chi-Kent L Rev* 383, 394–95. There are a number of contributions in the literature that have addressed this problem formally in a mathematical model. Landes and Posner (n 5); O Ben-Shahar, 'Property Rights in Stolen Goods' (1997) <[http://home.uchicago.edu/omri/pdf/articles/Buyer\\_In\\_Good\\_Faith.pdf](http://home.uchicago.edu/omri/pdf/articles/Buyer_In_Good_Faith.pdf)> accessed 14 October 2014; C Rose, 'The Transfer of Property Rights by Theft: an Economic Analysis' (2010) 30 *Eur JL & Econ* 247; Schwartz and Scott (n 4).

nutshell: owners should protect their property, while buyers should inquire about the title of the goods they buy. Legal protection is said to affect these incentives in a predictable way. If the law protects the buyer, owners will have incentives to protect their property while buyers will have no incentives to inquire about the property title. Conversely, if the law protects the original owner, buyers will have incentives to inquire about the title, while owners will have no incentives to protect their property. This approach captures an important aspect of the problem: actions taken by owners and buyers can help reduce the incidence of theft by making either theft more difficult (private protection) or the resale of stolen property less likely (by inquiring about the title), suggesting that the optimal level of legal protection should be set in order to provide the optimal mix of incentives. One important characteristic of the incentive approach is that it calls for a uniform treatment of the good faith purchase problem and does not provide elements for explaining comparative variation. Therefore, it cannot be used to inform an empirical analysis into the causes of comparative variation.

The alternative approach holds that ownership of a stolen good should be assigned ex post to the party that values it the most.<sup>34</sup> Unlike the incentive approach, the value approach produces implications for comparative variation once one recognises the importance of transaction costs and heterogeneous moral values. Due to the prevalence of transaction costs, most transactions occur through intermediaries. Moral norms are heterogeneous within jurisdictions and hence some intermediaries are honest, while others are willing to steal and resell the good. Honest intermediaries can only operate in markets in which buyers value goods more than their original owners and hence there is scope for trade. Dishonest intermediaries also prefer such markets because they are characterised by higher resale prices. It follows that, on average, buyers value goods more than their original owners do and, hence, the ownership of stolen goods should in principle be assigned to buyers.<sup>35</sup> Yet, societies differ in their moral norms and the strength of their law enforcement and hence implement this criterion in different degrees: these differences immediately imply a sharp empirical prediction on the determinants of comparative variation.

<sup>34</sup> See B Medina, 'Augmenting the Value of Ownership by Protecting It Only Partially: The 'Market-Overt' Rule Revisited' (2003) 19 *JL Econ & Org* 343. On this point see also O Bar-Gill and N Persico, 'Exchange Efficiency with Weak Property Rights' (2012) <<http://ssrn.com/abstract=2161659>> accessed 14 July 2014. On the importance of property rights for investment and trade see T Besley and M Ghatak, 'Property Rights and Economic Development' in D Rodrik and M Rosenzweig (eds), *Handbook of Development Economics*, vol 5 (Elsevier 2012) 4525.

<sup>35</sup> A possible objection to this argument is that, in an efficient market, owners who have not sold their goods must value them more than buyers. Hence, dishonest intermediaries transfer goods from a high-valuing to a low-valuing party. Yet, this is only true if market transactions take place before theft. In reality, instead, both honest and dishonest intermediaries operate simultaneously in the market, so that it is not plausible that all dispossessed owners have a high valuation of the good.

**Table 2.** Strength of Enforcement and a Culture of Morality in Four Countries (left) and their Respective Level of Owner Protection in Private Sales (right)

	Low morality	High morality		Low morality	High morality
Strong enforcement	Italy	France	Strong enforcement	Buyer protection	Intermediate protection
Weak enforcement	Turkey	Denmark	Weak enforcement	Intermediate protection	Owner protection

### C. *How Self-Reliance Affects Law*

On the one hand, in jurisdictions with stronger enforcement and efficient courts, protecting the buyer is more relevant than in other jurisdictions. This is because stronger enforcement makes owner protection a relatively effective way to transfer goods back to their original owners. This is undesirable; hence, the greater the strength of enforcement in a jurisdiction, the greater the probability of observing buyer protection. On the other hand, in jurisdictions with a strong culture of morality, there is less propensity to steal; hence, relatively few goods on the market are stolen and it becomes less desirable to protect buyers. Thus, the lower the level of trust and respect, the greater the probability of observing buyer protection.

Table 2 illustrates these predictions by building on the four representative jurisdictions we use as examples: countries with a stronger culture of morality but weaker enforcement have stronger owner protection than countries with weaker norms of trust and respect but stronger law enforcement. Given the definition of self-reliance we gave in the Introduction, the effects of a culture of morality and the strength of enforcement on law can be condensed into the following testable hypothesis:

*Hypothesis: A higher degree of self-reliance is associated with a higher level of owner protection.*

Looking again at Table 2, self-reliance is indeed high in the bottom-right box and low in the upper-left box, while it takes an intermediate value in the other two boxes. The quest for different optimal rules for different jurisdictions sets our approach apart from the vast literature on good faith purchase, which generally tries to identify the rule that is most desirable for all legal systems.<sup>36</sup>

<sup>36</sup> Landes and Posner (n 5); Weinberg (n 32); Ben-Shahar (n 33); Schwartz and Scott (n 4). Exception are Levmore, 'Variety and Uniformity' (n 3); Reyhan (n 5) 955; Lehavi and Licht (n 20).

In contrast, our inquiry is based on the idea that each jurisdiction selects a desired level of owner protection depending on its cultural characteristics.

Since each owner was at some point in the past a buyer and each buyer becomes an owner after the purchase, society (consisting of all potential owners and buyers) is likely to choose the legal rule behind a veil of ignorance, which is, not knowing which role an individual will have once the ownership of stolen goods is assigned. Thus, society is most likely to advance social welfare by maximising the ex post value of goods rather than catering to the specific interests of either owners or buyers. In the following, we will show that the relationship between self-reliance and owner protection empirically holds in our large sample of countries and will contrast our hypothesis with four dominant theories of comparative variation. In the analysis, we focus on the most salient index of bona fide purchase through a private sale, yet, our results are similar for the general term of adverse possession in good faith and for other sale environments (see Appendix).<sup>37</sup> Before proceeding we address two preliminary issues.

The fact that the owner might have to compensate the buyer upon reclaiming the good does not change our conclusions. In fact, to the extent that compensation perfectly matches the buyer's valuation of the good, owners will rarely reclaim the good because, as we have explained, buyers typically value the good more than original owners and hence the owner compensation will typically exceed the owner's willingness to pay. Compensation, however, will often be less than the buyer's valuation; for instance, some jurisdictions in our sample require that the owner pay the purchase price, which will typically be lower than the buyer's valuation. If this is the case, owner protection results in an undesirable transfer of the good to a lower-value user. In conclusion, compensation equal to the buyer's valuation counters the effect of owner protection but, in reality, compensation is typically imperfect. In both cases, our results remain valid.

An additional factor that might be relevant is the effect of good-faith purchase rules on the value of goods for owners and buyers. Since buyer protection prevents dispossessed owners from reclaiming their goods and might make thieves more aggressive, implementing buyer protection might reduce the security of ownership and hence the value owners attach to their goods. Yet, the same effect would occur for buyers since they become owners after the purchase. Therefore, both the valuation of owners and buyers will simultaneously change due to a change in the rule. Since our analysis is based on a comparison between the owner's and the buyer's valuation, our results remain valid.

<sup>37</sup> The index on statutes of limitations is largely irrelevant for the statistical analysis in that either its length exceeds the terms for adverse possession or acquisitive prescription or because it starts running only after the owner locates the stolen good. See Schwartz and Scott (n 4) 1336–37. In a few cases, when the statute of limitations is relevant, the index on good faith purchase of stolen goods already includes consideration of it. The data on compensation and on the definition of good faith deliver similar results.

### D. Culture, Language and Law

More secure property rights for the original owner and, in turn, a lower incidence of theft might, on the one hand, reinforce norms of trust and respect and, on the other, relax the need to enforce the law. Because of this plausible reverse causality issue, the results summarised in Figure 2 might appear weaker than they really are or, even worse, they might be spurious. To address this problem, we rely on basic features of languages, pronoun usage, to identify the impact of culture on the law. These grammatical features persist for centuries so that it is hard to envision any dependence on private law rules. Moreover, motivated by a theory known as the Sapir-Whorf Hypothesis on the connection between language and cognitive processes,<sup>38</sup> a large literature in linguistics and anthropology has verified empirically that language modulates the way in which individuals see and interpret the world and hence affects the prevailing culture.<sup>39</sup> As a consequence,<sup>40</sup> the features of the language spoken by the plurality group in a jurisdiction can be used to capture exogenous and long-lived components of culture.<sup>41</sup> Two culturally relevant features of pronoun usage in different languages have been identified by Emiko Kashima and Yoshihisa Kashima: ‘pronoun drop’ and ‘pronoun difference’.<sup>42</sup> Concerning the first feature, some languages, such as Italian and Turkish, allow the speaker to drop the first person pronoun next to a verb—that is, one can say ‘go’ instead of ‘I go’—while other languages, such as Danish and French, do not allow such usage. The possibility of dropping the first-person pronoun

<sup>38</sup> E Sapir, *Language* (Harcourt 1921); BL Whorf, *Language, Thought, and Reality: Selected Writings of Benjamin Lee Whorf* (JB Carroll ed, MIT 1956). Skepticism toward the Sapir-Whorf Hypothesis derives from the idea that languages are manifestations of a uniform innate ‘universal grammar’ and hence cannot shape the speakers’ ways of thinking: N Chomsky, *Syntactic Structures* (de Gruyter 1957); S Pinker, *The Language Instinct: How the Mind Creates Language* (William Morrow 1994). On the cultural role of language see M Douglas, *Natural Symbols* (Barrie and Rockliff 1970) and B Bernstein, *Class, Codes and Control* (Routledge 1971).

<sup>39</sup> JA Lucy, ‘Linguistic Relativity’ (1997) 26 *Ann Rev Anthro* 291; L Boroditsky, ‘Linguistic Relativity’ in L Nadel (ed), *Encyclopedia of Cognitive Science* (Nature PG 2003) 917; P Wolff and KJ Holmes, ‘Linguistic Relativity’ (2011) 2 *Cog Sci* 253.

<sup>40</sup> See C Chiu, ‘Language and Culture’ (2011) 4(2) *Online Readings in Psychology and Culture* 2015 for a review of studies documenting the effect of language on culture. In particular, studies on bilingual subjects have found that behaviour is affected by the language used in the experiment (ibid 6–7).

<sup>41</sup> AN Licht, C Goldschmidt and SH Schwartz, ‘Culture Rules: The Foundations of the Rule of Law and Other Norms of Governance’ (2007) 35 *J Comp Econ* 659; Y Givati and U Troiano, ‘Law, Economics and Culture: Theory and Evidence from Maternity Leave Laws’ (2012) 56 *JL & Econ* 339; G Tabellini, ‘Culture and Institutions: Economic Development in the Regions of Europe’ (2010) 8 *J Eur Econ A* 278; K Chen, ‘The Effect of Language on Economic Behavior: Evidence from Savings Rates, Health Behaviors, and Retirement Assets’ (2013) 103 *Am Econ Rev* 690. The latter study has spurred a discussion focusing especially on two issues: languages traits diffuse geographically and often co-evolve with other cultural traits. Language and law are unlikely to have coevolved, as we argue in section 1.E; geographical diffusion should be detectable in the effect of common law (a geographically diffused feature of a legal system) but the analysis in section 1.B returns an insignificant coefficient, suggesting that this is not likely to be the case for the issue at stake. Caveats to this approach have also been stressed by S Roberts and J Winters, ‘Linguistic Diversity and Traffic Accidents: Lessons from Statistical Studies of Cultural Traits’ (2013) 8 *PLoS ONE* 1.

<sup>42</sup> ES Kashima and Y Kashima, ‘Culture and Language: The Case of Cultural Dimensions and Personal Pronoun Use’ (1998) 29 *J Cross-Cultural Psychol* 461; ES Kashima and Y Kashima, ‘Erratum to Kashima and Kashima (1998) and Reiteration’ (2005) 36 *J Cross-Cultural Psych* 396; L Davis, ‘An Extension of the Kashima and Kashima (1998) Linguistic Dataset’ (2012) <[www.researchgate.net/publication/251322328\\_An\\_Extension\\_of\\_the\\_Kashima\\_and\\_Kashima\\_%281998%29\\_Linguistic\\_Dataset](http://www.researchgate.net/publication/251322328_An_Extension_of_the_Kashima_and_Kashima_%281998%29_Linguistic_Dataset)> accessed 14 October 2014.

attributes less prominence to the self in the discourse and prompts weaker norms of trust and respect for individuals outside the family circle.<sup>43</sup> Kashima and Kashima explain this relationship very clearly:

the linguistic practice of pronoun drop, particularly the omission of the first-person singular pronoun (eg 'I' in English), is linked to the psychological differentiation between the speaker and the context of speech, including the conversational partner. An explicit use of 'I' (ie first-person singular deictic pronoun) signals that the person is highlighted as a figure against the speech context that constitutes the ground; its absence reduces the prominence of the speaker's person, thus reducing the figure-ground differentiation.

[Therefore,] [l]anguages licensing pronoun drop are associated with lower levels of Individualism than those that require the obligatory use of personal pronouns such as 'I' or 'you' as a subject of the sentence.<sup>44</sup>

Kashima and Kashima show that jurisdictions where the plurality group speaks a language that does not license pronoun drop are associated with a culture of individualism. Indeed, '[s]ocieties whose cultures emphasize individual uniqueness and view individual persons as moral equals are likely to develop norms that promote societal transparency as a means for social coordination' and, hence, are characterised by high levels of trust and respect for others.<sup>45</sup>

Concerning the second feature, in some languages, such as Italian and French, there are two (or more) different second person pronouns, one for formal and one for informal contexts, such as 'ye' and 'thou' in early English, suggesting social distance and regard for hierarchy. In other languages, such as Danish and Turkish, these differences do not occur. Kashima and Kashima explain this point as follows:

Earlier in history a higher status person called a lower status person by *T*, whereas the lower status person addressed the higher status person by *V*. More recently, however, equal status people call each other by *T* or *V* depending on their intimacy; the *T* of intimacy and the *V* of formality. In other words, the *T-V* differentiation was used to index power difference before, but more recently is used to index social distance. To use the *T-V* distinction appropriately, the speakers must pay close attention to the type of their interpersonal relationships with their addressees. In contrast, the use of present-day English, which has only one 2PS [second person] pronoun, *you*, does not require the speaker to hold or attend to such information... Thus, a language with multiple 2PS pronouns implies, relative to a language with only one 2PS pronoun, a conception of the self-other relationship that is structured by social distance, such as power differentiation (ie status hierarchy) and ingroup-outgroup differentiation (ie differentiation between insiders who are close and outsiders who are distant).<sup>46</sup>

<sup>43</sup> See for this definition J-P Platteau, *Institutions, Social Norms, and Economic Development* (Routledge 2000).

<sup>44</sup> Kashima and Kashima, 'Culture and Language' (n 42) 465 and 477 (footnotes omitted).

<sup>45</sup> Licht, Goldschmidt and Schwartz, 'Culture Rules' (n 41) 663.

<sup>46</sup> Kashima and Kashima, 'Culture and Language' (n 42) 467 (footnotes omitted). See also P Mühlhäusler and R Harré, *Pronouns and People: The Linguistic Construction of Social and Personal Identity* (Blackwell 1990) 139.

**Table 3.** Grammatical Rules (left) and Owner Protection in Private Sales (right)

	Drop	No drop		Drop	No drop
Difference	Italy	France	Difference	0	3
No difference	Turkey	Denmark	No difference	5	Never

Again, Kashima and Kashima demonstrate that jurisdictions where the plurality group speaks a language licensing pronoun difference are associated with a culture of regard for hierarchy. Indeed, societies that ‘view the individual as an embedded part of hierarchically organized groups... are more likely to accommodate exercise of power from above’ and hence condone a stronger centralised enforcement.<sup>47</sup>

The empirical results by Kashima and Kashima allow us to use features of pronoun usage to classify countries along two cultural dimensions. Countries whose languages use both pronoun drop and pronoun difference (for instance, Italy) exhibit lower levels of trust and respect for the individual and higher regard for hierarchy than countries with no drop and no difference (such as Denmark). France and Turkey fall somewhere in between these two extremes, as they score high on one measure and low on the other: French allows for pronoun difference but not for pronoun drop, while Turkish allows for pronoun drop but not for pronoun difference. Table 3 illustrates this point and shows how language features are related to owner protection in the four countries that we use as examples.

Notably, Table 3 illustrates the correlations described at the outset: trust and respect, as measured by pronoun drop, are positively related to owner protection, while the strength of enforcement, as measured by pronoun difference, is negatively related to it. Most importantly, using pronoun usage to measure these two cultural features makes us confident that we are not picking up an effect of law on culture rather than the opposite.

As anticipated above, to simplify the interpretation of the results, we summarise the two language features in our self-reliance variable. This variable takes a value equal to 1 if both features are present, 2 if either of the two is present, and 3 if none of them is present. This definition implies that a language scoring lower on self-reliance more easily accommodates power from above and puts less focus on being trustworthy and respectful with strangers.<sup>48</sup>

<sup>47</sup> Licht, Goldschmidt and Schwartz, ‘Culture Rules’ (n 41) 663.

<sup>48</sup> In our data, the Spearman correlation coefficients between self-reliance and our measures of trust and respect are 0.27 and 0.28 respectively. On the contrary, the Spearman correlation coefficient between self-reliance and our metrics of enforcement is -0.11.

### E. *Evaluating Causality: A Case Study*

Guido Tabellini has argued that

language evolves slowly over time, almost certainly more so than values. Moreover, the two grammatical rules on the use of pronouns capture deep and stable features of the language (this is particularly true of the rule forbidding pronoun drop). Hence, there is little doubt that they are correlated with distant cultural traditions, rather than with more recently acquired traits. Thus, using Language as an instrument for values, we have taken care of the problem of reverse causation.<sup>49</sup>

Yet, in the long run languages are also endogenous, since they adapt to the environment and the communication needs of their speakers. For instance, both English and Polish varied their use of pronoun difference over time but in opposite ways. In the 14th century, Polish had no pronoun difference, but English did. In contrast, the current usage allows pronoun difference in Polish but not in English.<sup>50</sup>

The languages, cultures, and legal systems of nation states with long histories (for instance, England) developed simultaneously. Moreover, former colonies of European powers have often received both language and law from the coloniser. Therefore, although language is considered by many scholars a determinant of culture and law,<sup>51</sup> it is crucial to establish that the relationship we find between language and law is causal. The history of Italy, Scandinavia, Eastern European countries (for instance, Poland), and some near Asian countries offers a nice case study for our claim regarding causality.

These countries did not have a history of independent nation statehood before 1815.<sup>52</sup> To elaborate, they were part of the Russian, Austrian or Ottoman Empire or existed under the kingdoms of Prussia, Denmark or Sweden. These powers crumbled in the 19th century or were wiped out by World War I, at the end of which national borders were drawn according to an ideal of ethnic homogeneity.<sup>53</sup> A new wave of decomposition into smaller nation states followed the fall of the Soviet Union, Yugoslavia and the Eastern Bloc. Italy followed a different path, acquiring independence by means of unification. Therefore, all of these newly independent nations chose their modern legal systems after 1815, and most of them at a much later date after the end of World War I or the fall of the Berlin Wall. At that time, the basic features of the language spoken by the majority of the population had most

<sup>49</sup> Tabellini, 'Culture and Institutions' (n 41) 278.

<sup>50</sup> Mühlhäusler and Harré (n 46) 149.

<sup>51</sup> Licht, Goldschmidt and Schwartz, 'Culture, Law, and Corporate Governance' (n 15) 252; Tabellini, 'Institutions and Culture' (n 15) and 'Culture and Institutions' (n 41).

<sup>52</sup> We consider Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Finland, Georgia, Greece, Hungary, Italy, Kosovo, Latvia, Lithuania, Montenegro, Norway, Poland, Romania, Serbia, Slovakia and Slovenia. For Albania, Armenia, Azerbaijan, Macedonia, Moldova and Ukraine we do not have data on either languages or the law.

<sup>53</sup> E Hobsbawm, *The Age of Extremes* (Michael Joseph 1994) 31.

likely already crystallised in the form that we know today. For instance, accurate data are available for English and Polish. ‘Thou’ and ‘ye’ in written English had been displaced by ‘you’ by the mid-17th century.<sup>54</sup> Similarly, Polish had already acquired the current pronoun usage by the mid-15th century.<sup>55</sup>

Figure 5 shows the levels of self-reliance in the 22 countries that we consider here and contrasts them with the level of protection afforded to owners versus good faith buyers in private sales. As the theory predicts, a higher level of self-reliance corresponds to a higher level of owner protection. This is particularly evident in Norway, Finland, Slovakia, Italy, Croatia and Belarus. Most of the remaining countries have low levels of self-reliance but exhibit intermediate levels of protection. Yet, in all but two cases (Estonia and Greece), the buyer acquires ownership in three years (five years in Estonia). Therefore, even if protection is classified as intermediate, in fact it is very close to buyer protection, which corresponds nicely with the low levels of self-reliance. The Czech Republic and Hungary have intermediate levels of self-reliance but exhibit pure owner protection, confirming the trend even if not perfectly matching it. Cyprus, Serbia, Montenegro and Kosovo are not in line with these trends; however, other determinants of comparative variation could explain these differences. In over four-fifths of the cases considered here, countries with a predetermined endowment of culture as captured by their crystallised language moved toward an optimal level of owner protection after gaining independence. The evidence provided by this case study supports our claim that the correlations we find are not due to reverse causality.

### 3. *Empirical Analysis*

To test the explanatory power of self-reliance versus other theories of comparative variation we employ regression analysis. In each of the regressions reported in Table 4, we consider the effect of two explanatory variables on our index of owner protection in private sales. One explanatory variable is always self-reliance, while the other one changes across regressions, so that each regression considers a different factor borrowed from an alternative theory of comparative variation. Thus, each regression tests whether cross-country variation in owner protection is statistically related to variation in self-reliance

<sup>54</sup> We have gathered this information from two comprehensive online databases. The Google Books Ngram Viewer <<http://books.google.com/ngrams>> tracks the usage frequency of words in a corpus of over 5 million digitalised books, corresponding to approximately 4% of all books ever published; see J-B Michel and others, ‘Quantitative Analysis of Culture Using Millions of Digitized Books’ (2011) 331 *Science* 176. The Corpus of Historical American English <<http://corpus.byu.edu/coha>> contains 400 million words of text of American English from 1810 to 2009 and shows a further sharp decline in the use of ‘thou’ after 1810. Both databases were accessed on 26 November 2012. See also AH Jucker and I Taavitsainen, ‘Introduction’ in AH Jucker and I Taavitsainen (eds), *Diachronic Perspectives on Address Term Systems* (John Benjamins 2003) 1, 5 (arguing that ‘thou’ had virtually disappeared in Britain by 1700).

<sup>55</sup> See Mühlhäusler and Harré (n 46) 149.

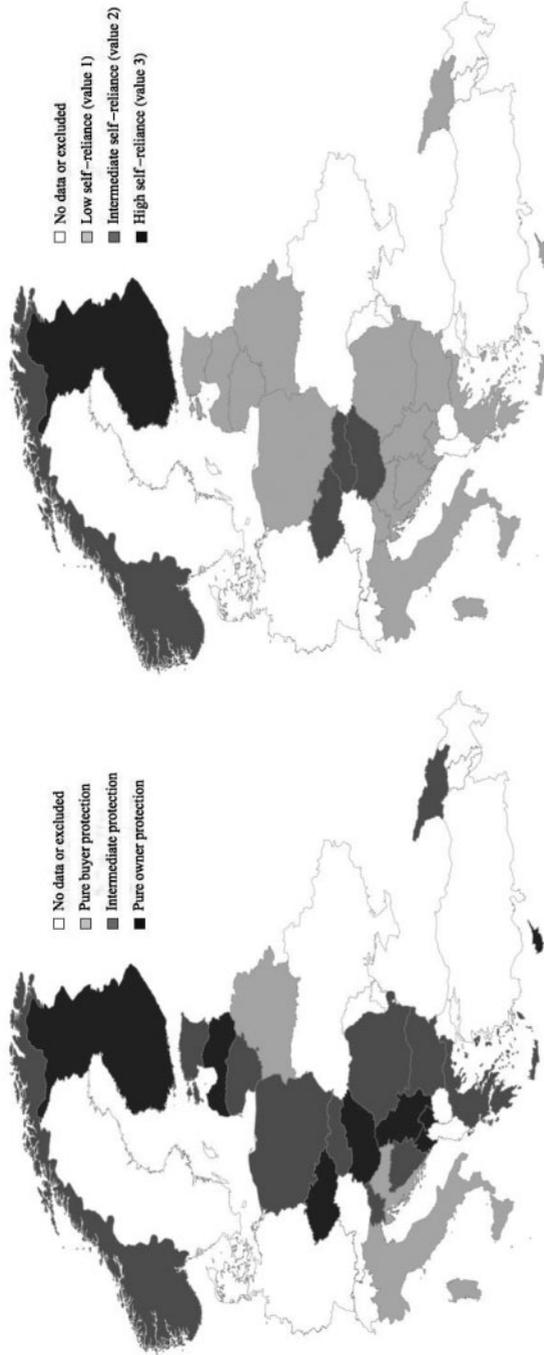


Figure 5. Owner Protection in Private Sales (left) and Self-reliance (right) in 22 Young Legal Systems

**Table 4.** Endogenous Owner Protection in Private Sales — Reduced Form

	(1)	(2)	(3)	(4)
	The dependent variable is:			
	<i>Property–Private</i>	<i>Property–Private</i>	<i>Property–Private</i>	<i>Property–Private</i>
<i>Self-Reliance</i>	7.422 (1.637)***	5.565 (1.672)***	6.682 (1.685)***	5.764 (1.831)***
<i>Common law</i>	0.302 (5.047)			
<i>Democracy</i>		1.344 (0.685)*		
<i>Majoritarianism</i>			– 7.051 (5.407)	
<i>Protestantism</i>				0.044 (0.066)
Estimation	OLS			
Number of observations	88	102	77	108
Adjusted R <sup>2</sup>	0.18	0.17	0.19	0.13

Notes: 1. Standard errors in parentheses.

2. \*\*\* denotes significant at the 1% confidence level; \*\*, 5%; \*, 10%.

3. All specifications include a constant term.

or to variation in the alternative factor, that is, it tests whether self-reliance explains comparative variation better than an alternative theory.

For each of the two explanatory variables the regression analysis returns two crucial pieces of information that we will use in the following sections: a coefficient and a  $p$ -value. The coefficient measures the effect of the explanatory variable on owner protection. A large absolute value of the coefficient suggests that that variable explains a large part of the variation in bona fide purchase rules. The sign of the coefficient indicates whether an increase in the value of the explanatory variable is related to an increase (positive sign) or decrease (negative sign) in owner protection. However, in a large dataset, variables could be related to each other by chance. The  $p$ -value is the probability of obtaining the observed distribution of data given that the coefficient is equal to zero. If lower than 1% (three asterisks in the table), there is very low chance that a coefficient equal to zero has spurred the observed variation and we can reject at this confidence level that the coefficient is null and, consequently, that the results of the regression analysis are due to chance. We also consider two other less stringent confidence levels: 5% (two asterisks) and 10% (one asterisk). If a coefficient is not statistically significant (no asterisk), the corresponding explanatory variable fails to account for variation in owner protection.

In the Appendix we provide the definition, source and summary statistics of each variable plus some additional statistical analysis, as well as additional robustness checks.<sup>56</sup> In each of the following subsections, we will introduce a

<sup>56</sup> First, we document that our conclusions are similar when we regress our different measures of owner protection on the proxies for a culture of morality and the quality of law enforcement. Second, we show that these results remain stable when we use the full-form 2SLS, ie we first regress each of our proxies for culture and

theory of comparative variation, illustrate its empirical implications, explain how we measure its relevance and discuss the results of our test as reported in Table 4.

### A. *Functional Equivalence Versus Self-Reliance*

Konrad Zweigert and Hein Kötz authoritatively propose that formally different legal rules often reach the same results in practice.<sup>57</sup> Thus, comparative variation needs to be assessed not on the basis of superficial differences between formal rules, but by looking at the deeper differences in the effects that those rules have on behaviour. Thus, a long tradition of comparative law studies seeks to understand how different legal systems deal with the same factual situations.<sup>58</sup> In our case, the factual question is which party—the owner or the buyer—can recover or retain the good.

The main empirically testable implication of the functional equivalence theory has been put forward by Saul Levmore, who argues that most differences among legal systems can be rationalised as noise: the question is so subtle that most people would have different opinions as to which solution is best. Thus, while it is clear that theft should be punished and hence we observe uniformity in the punishment of theft across countries, it is less clear whether the owner or the buyer should recover or retain a stolen good, and hence we observe comparative variation.<sup>59</sup> This claim is based on the underlying idea that legal systems tend to develop a single efficient rule to deal with similar problems,<sup>60</sup>

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enforcement on each of the two components of our measure of self-reliance, then we save the fitted values, and next we regress our metrics of owner protection on these newly defined variables. Finally, we provide evidence suggesting that our instruments do not affect directly the property–contract balance and that the gist of our empirical exercise is not driven by other important observable features, like the pro-owner attitude of the jurisdiction, the settlement strategy of the colonisers and the strength of the jurisdiction's enforcement capacity.

<sup>57</sup> K Zweigert and H Kötz, *Introduction to Comparative Law* (3rd edn, NH 1998) 33–47.

<sup>58</sup> R Michaels, 'The Functional Method of Comparative Law' in M Reimann and R Zimmermann (eds), *Oxford Handbook of Comparative Law* (OUP 2006) 339; J Gordley, 'The Functional Method' in PG Monateri (ed), *Methods of Comparative Law* (Elgar 2012) 107.

<sup>59</sup> Levmore, 'Variety and Uniformity' (n 3) 44–45. U Mattei, 'Efficiency in Legal Transplants: An Essay in Comparative Law and Economics' (1994) 14 *Int'l Rev L & Econ* 3 attributes comparative variation to legal parochialism, which could be viewed as a form of random disagreement on the best outcome. Note that culture could be viewed as opinions. Yet this does not bring our approach to overlap with the functional equivalence approach since the question remains whether culture causes random noise or, as we claim, predictable effects on the law.

<sup>60</sup> For an early statement of this idea, see AA Alchian, 'Uncertainty, Evolution and Economic Theory' (1950) 58 *J Pol Econ* 211; Demsetz (n 5); LE Davis and DC North, *Institutional Change and American Economic Growth* (CUP 1971). On the view that law evolves in response to economic interests see OW Holmes, *The Common Law*, vol 2 (Little, Brown & Co 1881); MJ Horwitz, *The Transformation of American Law, 1780–1860* (Harvard University Press 1977); RA Posner, *The Economics of Justice* (Harvard University Press 1981). For a critical view see H Hovenkamp, 'The Economics of Legal History' (1983) 67 *Minn L Rev* 645. On the hypothesis that the common law evolves towards efficiency: RA Posner, *Economic Analysis of Law* (Aspen 2003) 503; PH Rubin, 'Why is the Common Law Efficient?' (1977) 6 *JLS* 51; GL Priest, 'The Common Law Process and the Selection of Efficient Rules' (1977) 6 *JLS* 65; JC Goodman, 'An Economic Analysis of the Evolution of the Common Law' (1978) 7 *JLS* 393; TJ Zywicki, 'The Rise and Fall of Efficiency in the Common Law: A Supply-Side Analysis' (2003) 97 *Nw L Rev* 1551; PA Fernandez and GAM Ponzetto, 'Stare Decisis: Rhetoric and Substance' (2012) 28 *JL Econ & Org* 313. The debate on whether the common law evolves more efficiently than civil law has generated a vast literature: WM Landes and RA Posner, 'Adjudication as a Private Good' (1979) 8 *JLS* 235; RC Cooter and L Kornhauser, 'Can Litigation Improve the Law Without the Help of Judges?' (1980) 9 *JLS* 139;

hence, there is a natural tendency toward convergence even absent any direct reciprocal influence.<sup>61</sup>

This clear empirical implication does not necessitate the identification of the efficient outcome. Since different rules are accounted for as quasi-random variations around the efficient solution (whatever that may be), differences among legal systems should emerge as random noise in a large sample of countries and, in particular, should not be correlated with a country's culture of morality. The functional equivalence theory predicts that differences should appear in the data as random noise with no particular pattern. In contrast with this prediction, we find that self-reliance enters the analysis with a positive and significant coefficient in each of the regressions in Table 4, which shows that comparative variation is not random noise and, to the contrary, is correlated with self-reliance.

### B. *Legal Origins Versus Self-Reliance*

The transplants theory, most frequently associated with Alan Watson, explains differences among legal systems as transplants from one system to another.<sup>62</sup> The underlying idea is that rules spread through direct contact between legal systems. According to Zweigert and Kötz, since most differences are in fact functionally equivalent, formal differences tend to persist.<sup>63</sup> This approach has also pervaded a long tradition of studies in political science and economics, although often under quite different guises. A taxonomy is best provided according to the channel through which transplants occur. The most fundamental manifestation of the transplants theory is the legal families

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J Hirshleifer, 'Evolutionary Models in Economics and Law' in P Rubin and R Zerbe (eds), *Research in Law and Economics* (Elsevier 1982) 1; PH Rubin, 'Common Law and Statute Law' (1982) 11 JLS 205; PH Aranson, 'The Common Law as Central Economic Planning' (1992) 3 Const Pol Econ 289; GK Hadfield, 'Bias in the Evolution of Legal Rules' (1992) 80 Geo LJ 583; MJ Bailey and P Rubin, 'A Positive Theory of Legal Change' (1994) 14 Int'l Rev L & Econ 467; V Fon and F Parisi, 'Litigation and the Evolution of Legal Remedies: A Dynamic Model' (2003) 116 Pub Choice 419; PH Rubin, 'Micro and Macro Legal Efficiency: Supply and Demand' (2005) 13 Sup Ct Econ Rev 19; PH Rubin, 'Why Was the Common Law Efficient?' in F Parisi and C Rowley (eds), *The Origins of Law and Economics: Essays by the Founding Fathers* (Elgar 2005) 383; KN Hylton, 'Information, Litigation and Common Law Evolution' (2006) 8 ALER 33; N Gennaioli and A Shleifer, 'The Evolution of Common Law' (2007) 115 J Pol Econ 43. See also GAM Ponzetto and PA Fernandez, 'Case Law versus Statute Law: An Evolutionary Comparison' (2008) 37 JLS 379; A Niblett, RA Posner and A Shleifer, 'The Evolution of a Legal Rule' (2010) 39 JLS 325; N Garoupa and CG Ligüerre, 'The Syndrome of the Efficiency of the Common Law' (2011) BU Int'l LJ 287; C Guerriero, 'Legal Traditions and Economic Performances: Theory and Evidence' in B Bouckaert and G De Geest (eds), *Encyclopedia of Law and Economics*, vol 8 (2nd edn, Elgar 2011) 144; C Guerriero, 'Endogenous Legal Traditions' (manuscript on file with the author, 2013).

<sup>61</sup> Murray (n 5) 24; Mattei, 'Efficiency in Legal Transplants' (n 59) 16; Zweigert and Kötz (n 57) 39; U Mattei, *Basic Principles of Property Law* (Greenwood 2000); M Kovač, *Comparative Contract Law and Economics* (Elgar 2011).

<sup>62</sup> A Watson, *Legal Transplants* (University of Georgia Press 1974); A Watson, *Roman Law and Comparative Law* (University of Georgia Press 1991); Mattei, 'Efficiency in Legal Transplants' (n 59). W Ewald, 'Comparative Jurisprudence (II): The Logic of Legal Transplants' (1985) 43 Am J Comp L 489. cf P Legrand, 'The Impossibility of Legal Transplants' (1997) 4 Maastricht J Eur & Comp L 111.

<sup>63</sup> Zweigert and Kötz (n 57). cf Mattei, *Basic Principles of Property Law* (n 61) 19–21.

theory in comparative law,<sup>64</sup> also known as legal origins theory in comparative economics,<sup>65</sup> according to which the primary channel for transplants was colonisation.<sup>66</sup> Thus, legal systems around the world are traditionally classified according to the family of origin, that is, whether they inherited common law or one of the varieties of civil law from a coloniser. This view tends to dichotomise a past in which differences somehow originated and a present in which differences are spread through transplants. Economists have derived from it a clear empirical prediction: current differences among different countries can be largely explained by the common–civil law divide.<sup>67</sup>

Another strand of the transplants theory allows for transplants in recent times and justifies them as borrowing from ‘prestigious’ systems.<sup>68</sup> However, the notion of prestige can be carefully defined only when looking at specific cases of borrowing and does not easily lend itself to empirical testing in a large sample of countries.<sup>69</sup> Yet another strand of the transplants theory views convergence as the result of competition among jurisdictions and has been pioneered by Roberta Romano.<sup>70</sup> If law is seen as a ‘product’, then competition forces less valuable rules out of the market—or, more precisely, out of the law books—and in the long run only the most efficient rules will survive. However, this theory does not require the surviving rules to be efficient. In fact, it admits both a race to the top and a race to the bottom.<sup>71</sup> In both cases, it predicts a large degree of uniformity and allows divergence only as the result of product differentiation, temporary disequilibrium due to experimentation or, more generally, random noise. Similar implications follow from diffusion studies,

<sup>64</sup> In a dynamic perspective, tradition has been added to the analysis to explain how legal notions persist through a country’s history. JM Smits, ‘Is Law a Parasite? An Evolutionary Explanation of Differences among Legal Traditions’ (2011) 7 Rev L & Econ 1.

<sup>65</sup> R La Porta and others, ‘Legal Determinants of External Finance’ (1997) 52J Fin 1131.

<sup>66</sup> R La Porta and others, ‘Law and Finance’ (1998) 106J Pol Econ 1113; EL Glaeser and A Shleifer, ‘Legal Origins’ (2002) 117 QJ Econ 1193; T Beck, A Demirgüç-Kunt, and R Levine, ‘Law and Finance: Why Does Legal Origin Matter?’ (2003) 31J Comp Econ 653; R La Porta, FL de Silanes and A Shleifer, ‘The Economic Consequences of Legal Origins’ (2008) 46J Econ Lit 285; cf L-W Lin, ‘Legal Transplants through Private Contracting: Codes of Vendor Conduct in Global Supply Chains as an Example’ (2009) 57 Am J Comp L 711.

<sup>67</sup> For critical appraisals see RG Rajan and L Zingales, ‘The Great Reversals: The Politics of Financial Development in the Twentieth Century’ (2003) 69J Fin Econ 5; MJ Roe, ‘Legal Origins, Politics, and Modern Stock Markets’ (2006) 120 Harv L Rev 460; Holger Spamann, ‘Contemporary Legal Transplants—Legal Families and the Diffusion of (Corporate) Law’ (2010) 2009 BYU L Rev 1813.

<sup>68</sup> A Watson, *The Evolution of Law* (Johns Hopkins University Press 1985). cf Mattei, ‘Efficiency in Legal Transplants’ (n 59) 16; N Garoupa and A Ogus, ‘A Strategic Interpretation of Legal Transplants’ (2006) 35 JLS 339.

<sup>69</sup> cf K Linos, ‘Diffusion through Democracy’ (2011) 55 Am J Pol Sci 678, showing empirically that news about international models and foreign policies shapes voters’ preferences and hence affects domestic policies.

<sup>70</sup> R Romano, ‘Law as a Product: Some Pieces of the Incorporation Puzzle’ (1985) 1 JL Econ & Org 225. See also U Mattei and F Pulitini, ‘A Competitive Model of Legal Rules’ in A Breton and others (eds), *The Competitive State* (Kluwer 1991) 207; Ogus, ‘Competition Between National Legal Systems’ (n 1); LE Ribstein and BH Kobayashi, ‘Choice of Form and Network Externalities’ (2001) 43 Wm & Mary L Rev 79; BH Kobayashi and LE Ribstein, ‘Delaware for Small Fry: Jurisdictional Competition for Limited Liability Companies’ (2011) U Ill L Rev 91. See also WW Bratton, JA McCahery, EPM Vermeulen, ‘How Does Corporate Mobility Affect Lawmaking? A Comparative Analysis’ (2009) 57 Am J Comp L 347.

<sup>71</sup> RL Revesz, ‘Rehabilitating Interstate Competition: Rethinking the ‘Race-to-the-Bottom’ Rationale for Federal Environmental Regulation’ (1992) 67 NYU L Rev 1210 and L Bebchuck, A Cohen, and A Ferrell, ‘Does the Evidence Favor State Competition in Corporate Law?’ (2002) 90 Cal L Rev 1775.

which view legal innovation as akin to technological and commercial innovations and hence look at the diffusion paths of novel doctrines.<sup>72</sup>

The jurisdictional competition and diffusion theories do not provide attractive explanations for comparative variation in that they mostly predict convergence toward a uniform rule or a variation as a result of quasi-random factors, which we discussed in subsection A.<sup>73</sup> The legal origin theory, as recently stated by Rafael La Porta, Florencio Lopez de Silanes and Andrei Shleifer,<sup>74</sup> instead predicts that comparative variation should be explained by the common law versus civil law origin of the system.<sup>75</sup> Yet looking at the legal family of a country at the moment of independence has two main drawbacks. First, it could capture whether the coloniser was Britain or another European power and hence confound information about legal institutions with other changes that the experience of colonisation might have brought about—not least things like business culture, language and religion. Second, recent evidence shows that many jurisdictions have reformed their legal systems after colonisation.<sup>76</sup> Accordingly, we classify jurisdictions along a civil–common law continuum by focusing on legal institutions in place today rather than at the time of colonisation. These measures comprise the following: (i) whether appellate decisions have precedential value; (ii) whether appeals are granted purely on issues of law or also on facts; (iii) whether judgments can be based on equity; (iv) whether procedure is adversarial; and (v) whether evidence is mostly submitted orally. If all these characteristics are present, the system can be classified as a pure common law system.<sup>77</sup> Hence, our continuous measure allows for a classification of countries based on their degree of proximity to a pure common law system. If the common–civil law divide has an effect on private law, we should be able to detect it in the data.

<sup>72</sup> JL Walker, 'The Diffusion of Innovations among American States' (1969) 63 *Am Pol Sci Rev* 880; Canon and Baum (n 27); W Twining, 'Social Science and the Diffusion of Law' (2005) 32 *JL & Soc'y* 203.

<sup>73</sup> See for instance BH Kobayashi and LE Ribstein, 'Evolution and Spontaneous Uniformity: Evidence from the Evolution of the Limited Liability Company' (1996) 34 *Econ Inquiry* 464 (studying the evolution of the limited liability company); Ogus, 'Competition Between National Legal Systems' (n 1) (distinguishing between situations in which preferences over the law are homogeneous and convergence is likely and situations in which preferences are heterogeneous and convergence is unlikely).

<sup>74</sup> La Porta, de Silanes and Shleifer (n 66).

<sup>75</sup> cf D Klerman and others, 'Legal Origin or Colonial History?' (2011) 3 *J Legal Analysis* 379; CJ Milhaupt and K Pistor, *Law and Capitalism: What Corporate Crises Reveal About Legal Systems and Economic Development Around the World* (University of Chicago Press 2008); CJ Milhaupt, 'Beyond Legal Origin: Rethinking Law's Relationship to the Economy – Implications for Policy' (2009) 57 *Am J Comp L* 831; See also K Pistor, 'The Standardization of Law and Its Effect on Developing Economies' (2002) 50 *Am J Comp L* 97.

<sup>76</sup> Guerriero, 'Endogenous Legal Traditions' (n 60), shows that the current law-making and adjudication institutions often differ from the transplanted ones and reflect the social effort to balance the volatility of the law induced by heterogeneous cultural biases and the bias produced by weak political institutions. C Guerriero, 'Endogenous Legal Traditions and Economic Outcomes' (2015) *J Comp Econ* (forthcoming) evaluates the bias introduced by the lack of consideration of the endogeneity of legal traditions in the analysis of the economic effect of the law. See also M Pargendler, 'Politics in the Origins: The Making of Corporate Law in Nineteenth-Century Brazil' (2012) 60 *Am J Comp L* 805; M Pargendler, 'The Rise and Decline of Legal Families' (2012) 60 *Am J Comp L* 1043.

<sup>77</sup> JH Merryman, *The Civil Law Tradition* (Stanford University Press 1969); Zweigert and Kötz (n 57); MA Glendon, PG Carozza and CB Picker, *Comparative Legal Traditions in a Nutshell* (Thomson 1999).

In order to contrast our cultural explanation with the legal origins explanation, we use a simple test. We are interested in verifying to what extent a common law origin can explain owner protection once we account for the effect of self-reliance. The first column in Table 4 shows that the coefficient attached to common law is positive but insignificant, whereas the coefficient on self-reliance is positive and significant. This suggests that, once we account for the effect of self-reliance, common law is not a good predictor of comparative variation in owner protection.

### C. Political Economics Versus Self-Reliance

A third very prominent approach to comparative variation not only in private but also in constitutional law views politics as a key determinant of the evolution of legal rules.<sup>78</sup> Powerful elites or political majorities might design the law to their advantage and hence differences across countries can be traced back to political conflict.<sup>79</sup> Rules that favour minorities only emerge as concessions due to the need to provide incentives to take part in economic activities or for fear of revolution.<sup>80</sup> Exogenous shocks can unbalance power and prompt institutional discontinuities; for instance, Mark Roe has argued that politics, not legal origin, explains differences in corporate governance across the world.<sup>81</sup> We consider two main political variables that could have an impact on the law: the strength of democracy and the nature of the electoral system (proportional versus majoritarian). In weaker democracies, powerful minorities can concentrate power and exploit the majority. In the context of our analysis this could imply that (at least initially) more politically powerful owners could obtain more legal protection of their property against theft.<sup>82</sup> Thus, the level of owner protection should be inversely correlated with the level of democracy.

<sup>78</sup> MR Damaška, *The Faces of Justice and State Authority* (Yale University Press 1986). This view has influenced the functional school in law and economics: F Parisi and J Klick, 'Functional Law and Economics: The Search for Value-Neutral Principles of Lawmaking' (2004) 79 *Chi-Kent L Rev* 431. There is also a large literature in political economy: Besley and Ghatak (n 34). See also T Ginsburg, *Comparative Constitutional Design* (CUP 2012).

<sup>79</sup> CP Gillette, 'Who Puts the Public in Public Good? A Comment on Cass' (1988) 71 *Marq L Rev* 534; S Levmore, 'Harmonization, Preferences, and the Calculus of Consent in Commercial and Other Law' (2013) 50 *CML Rev* 243; Rajan and Zingales (n 67); Roe (n 67); E Perotti and E-L von Thadden, 'The Political Economy of Corporate Control and Labor Rents' (2006) 114 *J Pol Econ* 145; JM Barnett, 'Property as Process: How Innovation Markets Select Innovation Regimes' (2009) 119 *Yale LJ* 384; JM Barnett, 'What's So Bad About Stealing?' (2011) 4 *J Tort L* 1.

<sup>80</sup> RK Fleck and FA Hanssen, 'The Origins of Democracy: A Model with Application to Ancient Greece' (2006) 49 *JL & Econ* 115; S Boranbay and C Guerriero, 'Endogenous (In)Formal Institutions' (manuscript on file with the authors, 2014); D Acemoglu and JA Robinson, *Economic Origins of Dictatorship and Democracy* (CUP 2005).

<sup>81</sup> Roe (n 67). Another strand of literature has argued that centralised systems emerge to counter private coercion by powerful elites, see E Glaeser and A Shleifer, 'The Rise of the Regulatory State' (2003) 41 *J Econ Lit* 401. In our analysis, self-reliance is not connected to private coercion but rather to the propensity to enforce the law and a culture of morality. Moreover, our analysis considers private expropriation—the involuntary transfer of the owner's property to an innocent buyer by a thief or another intermediary without legal power to do so—which is different from private coercion.

<sup>82</sup> See C Guerriero, 'Endogenous Property Rights' (manuscript on file with the authors 2014).

The nature of the political system could also affect the law. As shown by Marco Pagano and Paolo Volpin,<sup>83</sup> politicians in proportional systems tend to cater to the preferences of large constituencies while in a majoritarian system they go after the votes of pivotal groups. Hence, we would expect majoritarian systems to protect the concentrated interests of owners and proportional systems to be more open toward buyer protection.

An alternative hypothesis, which supports our cultural explanation, is that the roles of buyers and owners are normally interchangeable in a market setting, since owners were once buyers and buyers will become owners. Therefore, both owners and buyers should support rules that maximise total welfare or, stated otherwise, that cater to their interests behind the veil of ignorance, that is, before knowing whether they will be good faith buyers or dispossessed owners of stolen goods. From this perspective, both democracy and the electoral system should have no effect on owner protection.

To test the political economics theories against our cultural explanation, we employ the same procedure as in the previous section. We first examine democracy as measured by the constraints on the executive as coded in the Polity IV dataset, averaged over all available years.<sup>84</sup> As the second column of Table 4 shows, democracy does not have a statistically significant impact on owner protection whereas self-reliance does.

We now turn to the electoral system as an explanatory variable. We use the data collected by Lorenz Blume, Jens Müller, Stefan Voigt and Carsten Wolf on the electoral systems in force in a subset of our jurisdictions.<sup>85</sup> The third column of Table 4 confirms the crucial role of self-reliance and shows that majoritarian electoral systems have a small and only marginally significant impact on owner protection. This effect goes in the expected direction.

#### D. *Self-Reliance Versus Religious Beliefs*

The importance of culture for law and economic activities is the theme of a burgeoning literature.<sup>86</sup> A powerful determinant of cultural traits and their

<sup>83</sup> M Pagano and PF Volpin, 'The Political Economy of Corporate Governance' (2005) 95 *Am Econ Rev* 1005. See also B Hayo and S Voigt, 'Endogenous Constitutions: Politics and Politicians Matter, Economic Outcomes Don't' (2013) 88 *J Econ Behav & Org* 47.

<sup>84</sup> This measure ranges between 1 and 7 and takes higher values when the holder of executive powers is accountable to the citizenry and the government is constrained by checks and balances or by the rule of law. See MG Marshall and K Jagers, 'Political Regime Characteristics and Transitions, 1800–2008' <[www.systemicpeace.org/polity/polity4.htm](http://www.systemicpeace.org/polity/polity4.htm)> accessed 23 January 2015.

<sup>85</sup> See L Blume and others, 'The Economic Effects of Constitutions: Replicating—and Extending—Persson and Tabellini' (2009) 139 *Pub Choice* 197.

<sup>86</sup> R David and JEC Brierley, *Major Legal Systems in the World Today* (Stevens & Sons 1968) 14–20; Merryman, *The Civil Law Tradition* (n 77) 13–14; JB White, *The Legal Imagination* (University of Chicago Press 1973); R Cover, 'The Supreme Court, 1982 Term – Foreword: Nomos and Narrative' (1983) 97 *Harv L Rev* 4; B Grossfeld, *The Strength and Weakness of Comparative Law* (OUP 1990) 103; A Watson, 'From Legal Transplants to Legal Formats' (1995) 43 *Am J Comp L* 469; VG Curran, 'Cultural Immersion, Difference and Categories in US Comparative Law' (1998) 46 *Am J Comp L* 43; P Legrand, *Fragments on Law-as-Culture* (WEJ Tjeenk Willink 1999); L Rosen, *Law as Culture: An Invitation* (Princeton University Press 2006); J Smits, 'The Harmonization of Private Law in Europe: Some Insights from Evolutionary Theory' (2002) 31 *Ga J Int'l &*

diffusion is religion. A very influential theory proposed by Max Weber points to Protestantism as the determinant of a capitalistic attitude.<sup>87</sup> According to Weber, Protestantism removed the assurance of salvation, which had been guaranteed by the Roman Catholic Church to those who accepted sacraments and recognised the authority of the clergy, and submitted it to worldly success. At the same time, Protestantism discouraged luxury and seriously limited icons and decorations in churches and charity to the poor, which was seen as encouraging beggary. As a result, the Protestant ethic encouraged work and discouraged spending, channelling the proceeds of labour into reinvestment.<sup>88</sup>

The effect of religion on markets has been observed empirically; in particular, Stulz and Williamson show that Protestant countries exhibit higher levels of creditor protection than Catholic countries.<sup>89</sup> This is related to the Protestant view that interest is a normal part of commerce.<sup>90</sup> Accordingly, their data shows a higher level of creditor protection in Protestant countries. In relation to the good faith purchase of stolen goods, Protestantism should have important effects on how private property is regulated and in particular should induce more owner protection. More precisely, a larger share of Protestants in a country should be a good predictor for a higher level of owner protection.

Yet culture is not a monolithic phenomenon. Lehari and Licht have proposed individualism as a cultural feature that affects the protection of (both physical and intellectual) private property. In less individualistic countries, people are more strongly embedded in a social context and hence private property is more loosely protected.<sup>91</sup> It is therefore natural to inquire into the effects of different cultural features on the property–contract balance. In particular, we will compare the explanatory power of religion and self-reliance, which encompasses individualism as one of its two subcomponents.

To test the effect of Protestantism on owner protection we again employ the same empirical strategy. We use data from a study by Rafael La Porta, Florencio Lopez-de-Silanes, Andrei Shleifer and Robert Vishny reporting the share of the population belonging to the Protestant religion in 1980 in each country.<sup>92</sup> As the fourth column of Table 4 shows, the effect of Protestantism on owner protection is not statistically significant whereas the coefficient

Comp L 79, 80; G De Geest, 'Understanding French, German, and Civil Law More Generally' in J De Mot (ed), *Liber amicorum Boudewijn Bouckaert. Vrank en vrij* (die Keure 2012); F Trompenaars and C Hampden-Turner, *Riding the Waves of Culture* (Brealey 2012). See also citations at n 15.

<sup>87</sup> M Weber, *The Protestant Ethic and The Spirit of Capitalism* (S Kalberg trans, Roxbury 2001).

<sup>88</sup> In contrast, T Kuran, *The Long Divergence* (Princeton University Press 2011) argues that the lack of legal institutions rather than religion has held back the development of capitalism in Islamic countries.

<sup>89</sup> Stulz and Williamson (n 15).

<sup>90</sup> RH Tawney, *Religion and the Rise of Capitalism* (Harcourt, Brace & Co 1926).

<sup>91</sup> Lehari and Licht (n 20).

<sup>92</sup> R La Porta and others, 'The Quality of Government' (1999) 15 *JL Econ & Org* 222.

attached to self-reliance is still positive and highly significant. This result supports the view that culture is a multidimensional phenomenon, so that a specific characteristic of a legal system might be explained by a particular cultural trait while being independent of another. In turn, this reinforces our approach, which is grounded in the notion of self-reliance, capturing the two different and rather independent cultural traits of individualism and regard for hierarchy.

#### 4. Conclusion

Our analysis shows that comparative variation in good faith purchase rules can be traced back to deep cultural differences among countries and, in particular, different levels of self-reliance. We have shown that self-reliance fits the data better than alternative theories based on functional equivalence, legal origins, political economics, and religion, an alternative measure of culture. Our results should be appreciated within the limits of our empirical analysis. Our data concern a specific legal issue and hence do not imply that self-reliance should be embraced as the only determinant of comparative variation in all areas of the law. Quite the opposite, the evidence accumulated by the literature that we discuss suggests that comparative variation might be explained by different factors in different areas of the law. Furthermore, we did not attempt to test all theories of comparative variation. The need to feed the analysis with reliable data limits the scope of any empirical analysis. Although we believe that we have identified four widely representative approaches, as more data becomes available, more complete tests will be possible. Finally, our measure of cultural differences is limited to self-reliance, which was not meant to capture all cultural differences among countries. To the contrary, we have shown that different measures of culture—we used one measure based on self-reliance and another based on religion—have different effects on the law. Culture is a multifaceted phenomenon and there are many ways to quantify cultural differences. The approach we chose is not a superior description of culture in absolute terms but it fits the data on the good faith purchase of stolen goods better than the alternative we considered.

Going further, our results naturally produce a hypothesis on the diachronic evolution of good faith purchase rules. In Western countries, the baseline rule was the pure owner protection inherited from the Roman law maxim stating—in its modern formulation—that *nemo dat quod non habet*. This principle was slowly abandoned during the Middle Ages to give more room for the protection of buyers, especially for purchases effected in specified markets. This process raises the question of why and how the divergences that we now observe in modern law originated. Can they be rationalised as responses to changing cultural contexts? One view is that the development of impersonal markets brings with it a decrease in the levels of mutual trust and respect as it

attracts foreigners who do not share the same values as the community hosting and regulating the markets.<sup>93</sup> Moreover, market transactions are more transparent than private exchanges and should therefore ease law enforcement. These considerations suggest that divergence might have originated as a response to the certainly inhomogeneous distribution of markets across Europe. Yet, these conjectures require further historical research. In particular, it would be interesting to be able to track the changes in good faith purchase rules and to link them to specific historical events.

Finally, our analysis has implications for the current process of legal harmonisation. Understanding the causes of comparative variation is a fundamental precondition for discussing harmonisation. It is a truism that to decide whether two countries should have the same rules, one should first understand why they have different rules.<sup>94</sup> Different views of comparative variation suggest different harmonisation policies. If comparative variation is due to random noise, getting rid of it has the advantage of sparing the cost of legal uncertainty. If instead comparative variation is an optimal response to different cultural backgrounds, pushing harmonisation induces countries to deviate from their ideal rules and hence brings about large losses. Our analysis speaks against the unqualified elimination of legal differences and casts a vote for a central role of comparative legal scholarship even in a world of increasing legal harmonisation.<sup>95</sup>

<sup>93</sup> Sauveplanne (n 4) 652–55; Kozolchik (n 28) 1489.

<sup>94</sup> Sacco, 'Diversity and Uniformity in the Law' (n 2) 171–72; Zweigert and Kötz (n 57) 16; G Watt, 'Comparison as Deep Appreciation' in PG Monateri (ed), *Methods of Comparative Law* (Elgar 2012) 82, 86; P Legrand, 'Against a European Civil Code' (1997) 60 MLR 44; G Teubner, 'Legal Irritants: Good Faith in British Law or How Unifying Law Ends up in New Divergences' (1998) 61 MLR 11; F Antonioli, F Fiorentini and J Gordley, 'A Case-Based Assessment of the Draft Common Frame of Reference' (2010) 58 Am J Comp L 343; R Zimmermann, 'The Present State of European Private Law' (2009) 57 Am J Comp L 479.

<sup>95</sup> LE Ribstein and BH Kobayashi, 'An Economic Analysis of Uniform State Laws' (1996) 25 JLS 131; U Mattei, 'The Issue of European Civil Codifications and Legal Scholarship: Biases, Strategies, and Developments' (1998) 21 Hastings Int'l & Comp L Rev 883; MG Faure, 'How Law and Economics May Contribute to the Harmonization of Tort Law in Europe' in R Zimmerman (ed), *Grundstrukturen des Europäischen Deliktsrechts* (Mohr Siebeck 2003) 31. cf MM Siems, 'The End of Comparative Law' (2007) 2J Comp L 133.

APPENDIX for

Law and Culture:  
A Theory of Comparative Variation  
in Bona Fide Purchase Rules

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Table 1.A: Summary of Variables

	Variables	Definition and Sources	Summary Statistics
Pro-owner legal institutions:	<i>Property–Private:</i>	Years after which the good faith buyer definitively acquires ownership of a stolen movable good purchased within a private sale. Source: see text.	12.056 (12.765) [126]
	<i>Adverse–Possession:</i>	Years needed for adverse possession by any good faith possessor of a movable good. Source: see text.	11.306 (11.890) [126]
	<i>Property–Market:</i>	Years after which a good-faith buyer definitively acquires ownership of a stolen movable good purchased within a public market. Source: see text.	10.961 (12.677) [77]
	<i>Property–Professional:</i>	Years after which a good-faith buyer definitively acquires ownership of a stolen movable good purchased from a professional seller. Source: see text.	9.390 (12.068) [77]
	<i>Property–Auction:</i>	Years after which a good-faith buyer definitively acquires ownership of a stolen movable good purchased within an auction sale. Source: see text.	8.610 (12.066) [77]
	<i>Good-faith:</i>	Dummy equal to zero when good-faith is presumed and one otherwise. Source: see text.	0.273 (0.448) [77]
Culture and quality of public enforcement:	<i>Culture:</i>	First principal component extracted from the level of generalized trust and the importance of respect for other people self-reported to all the World Value Surveys and European Value Study up to the 2008. Source: Inglehart (2010).	0.012 (1.053) [77]
	<i>Enforcement:</i>	First principal component extracted from the number of police personnel and the number of professional judges per 100,000 inhabitants both averaged between 1973 and 2009. Source: United Nations Survey of Crime Trends and Operations of Criminal Justice Systems, all available waves.	0.041 (0.939) [77]
Self-Reliance:	<i>Self-reliance:</i>	Indicator variable which equals 3 if both <i>Pronoun-Drop</i> and <i>Pronoun-Diff</i> equal 1; 2 if either <i>Pronoun-Drop</i> or <i>Pronoun-Diff</i> equal 1, and 1 otherwise. Source: Kashima and Kashima (1998, 2005).	1.667 (0.749) [108]
	<i>Pronoun-Drop:</i>	1 if the language of the majority ethnic group allows dropping first-person pronoun, 0 otherwise. Sources: Kashima and Kashima (1998, 2005).	0.586 (0.496) [70]
	<i>Pronoun-Diff:</i>	1 if the language of the majority ethnic group has several second-person pronouns modulated according to the social distance between speakers. Sources: Kashima and Kashima (1998, 2005).	0.743 (0.440) [70]
Other controls:	<i>Common law:</i>	Normalised first principal component extracted from the following dummies coded for the year 2000: 1. <i>Case-Law</i> which equals 1 if the lawmaking institution was case law; 2. <i>Appeal-on-Law</i> , which equals 1 if only new evidence or issues of law can be reviewed or if there is no appeal and 0 if issues of both law and fact can be reviewed in appeal; 3. <i>Equity</i> , which is equal to 1 if judgment may be based on both law and equity grounds, and 0 when they must be on law only; 3. <i>Adversarial</i> , which equals 1 if the evidence gathering procedure is adversarial and 0 otherwise; 4. <i>Oral</i> , which has value one if the evidence is mostly submitted at oral hearings before the judge and zero otherwise. Source: Guerriero (2014).	0.343 (0.247) [93]
	<i>Democracy:</i>	Executive constraints from the POLITY IV data set averaged over all the available years. Source: Marshall and Jaggers (2010).	4.149 (1.828) [119]
	<i>Majoritarian:</i>	Dummy variable for electoral systems, equal to 1 if the lower house in a country is elected under plurality rule, 0 otherwise. Only legislative elections (lower house) are considered. Source: Blume and others, ‘The Economic Effects of Constitutions: Replicating—and Extending—Persson and Tabellini’ (2009) 139 Pub Choice 197.	0.116 (0.322) [86]
	<i>Protestantism:</i>	Protestants as a share of the whole population in 1980. Source: La Porta and others, ‘The Quality of Government’ (1999) 15 JL Econ and Org 222.	10.579 (19.745) [126]

Notes: 1. The first figure for each variable is the mean, whereas the second in brackets is the standard deviation;  
2. Each statistic is calculated for the maximum available sample, except *Property–Market*, *Property–Professional*, *Property–Auction*, and *Good-faith*, which are all calculated for the sample used to obtain tables 3 to 7. The number of observations on which the two statistics are calculated is reported in square brackets.

Table 1.B: Summary of Variables

Variables	Definition and Sources	Summary Statistics
<i>Income:</i>	Natural logarithm of the real gross domestic product per capita relative to the USA at current prices. Source: Center for International Comparisons of Production, Income and Prices < <a href="https://pwt.sas.upenn.edu">https://pwt.sas.upenn.edu</a> > accessed 23	3.443 (0.989) [77]
<i>Catholic:</i>	Percentage of the population that was Catholic in 1980. Source: La Porta and others (1999).	36.275 (38.595) [77]
<i>Muslim:</i>	Percentage of the population that was Muslim in 1980. Source: La Porta and others (1999).	11.729 (25.316) [77]
Other controls:		
<i>Pathogen-Load:</i>	Measure of the historical prevalence of seven different kinds of disease-causing pathogens, ie Leishmania, Trypanosoma, Malaria, Schistosoma, Filaria, Spirochetes, Leprosy. Source: R Murray and M Schaller, 'Historical Prevalence of Infectious Diseases Within 230 Geopolitical Regions: A Tool for Investigating Origins of Culture' (2010) 41 J Cross-Cultural Psych 99.	- 0.126 (0.602) [76]
<i>Corruption:</i>	Average corruption score between 1996 and 2010. Source: The World Bank Group, <i>The Worldwide Governance Indicators Project</i> < <a href="http://info.worldbank.org/governance/wgi/index.asp">http://info.worldbank.org/governance/wgi/index.asp</a> >	0.454 (1.090) [76]
<i>Conflicts:</i>	Share of the years between 1816, or the year of independence, and 1975 that a country was involved in an external military conflict. Source: Correlates of War < <a href="http://www.correlatesofwar.org">http://www.correlatesofwar.org</a> > accessed 23 January 2015.	0.079 (0.136) [77]
<i>British-Colony:</i>	Dummy for ex-English colony. Source: La Porta and others (1999).	0.234 (0.426) [77]
<i>French-Colony:</i>	Dummy for ex-French colony Source: La Porta and others (1999).	0.026 (0.160) [77]

Notes: 1. The first figure for each variable is the mean, whereas the second in brackets is the standard deviation;  
2. The statistics are calculated for the sample of 77 observations used to obtain tables 3 to 7. The number of observations on which the two statistics are calculated is reported in square brackets.

Table 2: Endogenous *Adverse-Possession* – Reduced Form

	(1)	(2)	(3)	(4)
	The dependent variable is:			
	<i>Adverse-Possession</i>	<i>Adverse-Possession</i>	<i>Adverse-Possession</i>	<i>Adverse-Possession</i>
<i>Self-Reliance</i>	7.542 (1.522)***	9.634 (1.458)***	7.351 (1.521)***	8.415 (1.636)***
<i>Common law</i>	1.481 (4.693)			
<i>Democracy</i>		- 0.712 (0.596)		
<i>Majoritarian</i>			- 5.256 (4.880)	
<i>Protestantism</i>				- 0.004 (0.059)
Estimation	OLS			
Number of observations	88	102	77	108
Adjusted R <sup>2</sup>	0.22	0.30	0.25	0.25

Notes: 1. Standard errors in parentheses.  
2. \*\*\* denotes significant at the 1% confidence level; \*\*, 5%; \*, 10%.  
3. All specifications include a constant term.

Table 3: Endogenous Pro-Owner Legal Institutions – OLS

	(1)	(2)	(3)	(4)	(5)	(6)
	The dependent variable is:					
	<i>Property-Private</i>	<i>Adverse-Possession</i>	<i>Property-Market</i>	<i>Property-Professional</i>	<i>Property-Auction</i>	<i>Good-faith</i>
<i>Culture</i>	1.425 (1.286)	3.379 (1.165)***	1.928 (1.244)	1.619 (1.262)	2.910 (1.191)**	0.102 (0.047)**
<i>Enforcement</i>	-0.584 (1.754)	-4.135 (1.017)***	-1.321 (1.709)	-3.237 (1.037)***	-3.030 (1.033)***	-0.001 (0.057)
Estimation	OLS	OLS	OLS	OLS	OLS	Probit
R <sup>2</sup>	0.02	0.20	0.03	0.08	0.11	
Pseudo R <sup>2</sup>						0.06
Log pseudo-likelihood						-42.495
Number of observations	77	77	77	77	77	77

Notes: 1. All specifications include a constant term.

2. The entries are coefficients except in column (6), which reports marginal effects.

3. Robust standard errors in parentheses.

4. \*\*\* denotes significant at the 1% confidence level; \*\*, 5%; \*, 10%.

Table 4: Endogenous Pro-Owner Legal Institutions – 2SLS

	(1)	(2)	(3)	(4)	(5)	(6)
	The dependent variable is:					
	<i>Property-Private</i>	<i>Adverse-Possession</i>	<i>Property-Market</i>	<i>Property-Professional</i>	<i>Property-Auction</i>	<i>Good-faith</i>
<i>Culture</i>	8.202 (4.233)*	9.747 (4.510)**	11.467 (4.363)***	9.180 (4.690)**	8.584 (3.972)**	1.005 (0.603)*
<i>Enforcement</i>	-15.070 (7.244)**	-21.436 (6.870)***	-15.005 (7.944)*	-19.475 (7.918)**	-16.409 (6.798)**	-1.827 (1.109)*
	First Stage for <i>Culture</i>					
<i>Pronoun-Drop</i>	-1.100 (0.276)***	-1.100 (0.276)***	-1.100 (0.276)***	-1.100 (0.276)***	-1.100 (0.276)***	-1.100 (0.276)***
<i>Pronoun-Diff</i>	0.120 (0.347)	0.120 (0.347)	0.120 (0.347)	0.120 (0.347)	0.120 (0.347)	0.120 (0.347)
R <sup>2</sup> in the first stage	0.24	0.24	0.24	0.24	0.24	0.24
	First Stage for <i>Enforcement</i>					
<i>Pronoun-Drop</i>	-0.348 (0.228)	-0.348 (0.228)	-0.348 (0.228)	-0.348 (0.228)	-0.348 (0.228)	-0.348 (0.228)
<i>Pronoun-Diff</i>	0.644 (0.198)***	0.644 (0.198)***	0.644 (0.198)***	0.644 (0.198)***	0.644 (0.198)***	0.644 (0.198)***
R <sup>2</sup> in the first stage	0.09	0.09	0.09	0.09	0.09	0.09
Estimation	2SLS	2SLS	2SLS	2SLS	2SLS	Two-step IV Probit
P-value of exogeneity test	0.00	0.00	0.01	0.01	0.03	
P-value of under-identification test	0.01	0.01	0.01	0.01	0.01	
Number of observations	70	70	70	70	70	70

Notes: 1. All specifications include a constant term.

2. Robust standard errors in parentheses.

3. \*\*\* denotes significant at the 1% confidence level; \*\*, 5%; \*, 10%.

4. The null hypothesis of the exogeneity test is that *Culture* and *Enforcement* can be treated as exogenous.

5. The null hypothesis of the underidentification test is that the excluded instruments are uncorrelated with the endogenous regressors.

Table 5: Endogenous *Adverse-Possession* – OLS With Other Relevant Controls

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
The dependent variable is <i>Adverse-Possession</i>								
<i>Culture</i>	3.453 (1.289)***	2.886 (1.237)**	3.996 (1.231)***	2.045 (1.369)	1.850 (1.381)	3.814 (1.236)***	3.334 (1.246)***	3.154 (1.039)***
<i>Enforcement</i>	-4.090 (1.015)***	-4.231 (1.027)***	-3.750 (1.244)***	-5.180 (1.167)***	-4.753 (1.199)***	-4.088 (1.020)***	-4.117 (1.325)***	-2.317 (0.848)***
<i>Income</i>	-0.141 (1.744)							
<i>Catholic</i>		-0.078 (0.033)**						
<i>Muslim</i>		-0.027 (0.052)						
<i>Pathogen-Load</i>			2.060 (2.518)					
<i>Democracy</i>				1.712 (0.865)*				
<i>Corruption</i>					2.370 (1.351)*			
<i>Conflicts</i>						-11.165 (8.067)		
<i>Common law</i>							-2.472 (5.250)	
<i>British-Colony</i>								16.938 (2.565)***
<i>French-Colony</i>								-4.443 (1.347)***
<i>Estimation</i>	OLS							
R <sup>2</sup>	0.20	0.26	0.20	0.25	0.23	0.22	0.20	0.58
Number of observations	77	77	76	73	76	77	65	77

Notes: 1. All specifications include a constant term.

2. Robust standard errors in parentheses.

3. \*\*\* denotes significant at the 1% confidence level; \*\*, 5%; \*, 10%.

Table 6: Endogenous *Adverse-Possession* – 2SLS with Other Relevant Controls

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
The dependent variable is <i>Adverse-Possession</i>								
<i>Culture</i>	7.415 (8.091)	8.488 (4.945)*	-2.719 (14.868)	-1.288 (6.899)	15.994 (19.289)	11.473 (6.134)*	12.723 (7.009)*	5.502 (2.615)**
<i>Enforcement</i>	-23.488 (9.081)***	-19.179 (7.164)***	-28.780 (13.205)**	-21.766 (7.307)***	-23.779 (8.855)***	-24.255 (7.293)***	-37.867 (17.260)**	-9.125 (6.318)
<i>Income</i>	3.824 (7.040)							
<i>Catholic</i>		-0.066 (0.069)						
<i>Muslim</i>		-0.060 (0.096)						
<i>Pathogen-Load</i>			-22.958 (21.298)					
<i>Democracy</i>				5.432 (2.928)*				
<i>Corruption</i>					-3.951 (13.529)			
<i>Conflicts</i>						-22.075 (18.244)		
<i>Common-Law</i>							-31.733 (20.758)	
<i>British-Colony</i>								13.119 (4.196)***
<i>French-Colony</i>								-8.248 (3.674)**
Estimation	2SLS							
P-value of exogeneity test	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.52
P-value of underidentification test	0.02	0.01	0.21	0.06	0.13	0.01	0.08	0.06
Number of observations	70	70	69	66	69	70	63	70

Notes: 1. All specifications include a constant term.

2. Robust standard errors in parentheses.

3. \*\*\* denotes significant at the 1% confidence level; \*\*, 5%; \*, 10%.

4. While the endogenous variables are *Culture* and *Enforcement*, the excluded instruments are *Pronoun-Drop* and *Pronoun-Diff*.

5. The null hypothesis of the exogeneity test is that *Culture* and *Enforcement* can be treated as exogenous.

6. The null hypothesis of the underidentification test is that the excluded instruments are uncorrelated with the endogenous regressors.

Table 7: Endogenous *Adverse-Possession* – Semi-Reduced-Form

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
The dependent variable is <i>Adverse-Possession</i>								
<i>Pronoun-Drop</i>	-3.846 (5.152)	-6.690 (3.163)**	2.973 (7.677)	0.951 (4.703)	-2.317 (4.774)	-7.698 (3.676)**	-8.637 (5.598)	-4.158 (2.319)*
<i>Enforcement</i>	-24.525 (7.877)***	-13.070 (4.069)***	-25.912 (9.644)***	-18.628 (4.679)***	-19.225 (5.380)***	-16.771 (4.170)***	-26.939 (8.678)***	-5.965 (5.190)
<i>Income</i>	7.337 (3.255)**							
<i>Catholic</i>		-0.095 (0.044)**						
<i>Muslim</i>		-0.015 (0.099)						
<i>Pathogen-Load</i>			-18.653 (9.695)*					
<i>Democracy</i>				5.751 (2.383)**				
<i>Corruption</i>					3.951 (13.529)			
<i>Conflicts</i>						-5.748 (9.214)		
<i>Common law</i>							-30.978 (14.982)**	
<i>British-Colony</i>								13.500 (4.124)***
<i>French-Colony</i>								-7.085 (4.692)
Estimation	2SLS							
P-value of underidentification test	0.00	0.00	0.02	0.00	0.00	0.00	0.02	0.02
Number of observations	82	82	81	78	81	82	72	82

- Notes: 1. All specifications include a constant term.  
2. Robust standard errors in parentheses.  
3. \*\*\* denotes significant at the 1% confidence level; \*\*, 5%; \*, 10%.  
4. While the endogenous variable is *Enforcement*, the excluded instrument is *Pronoun-Diff*.  
5. The null hypothesis of the underidentification test is that the excluded instrument is uncorrelated with the endogenous regressor.

## *List of Contributors*

This study could not have been written without an army of national contributors who generously provided information on the law in force in the countries in our sample. We are deeply indebted to them for their effort and time.

Besa Tauzi, Boga & Associates (Albania); António Vicente Marques and Cláudia Veloso, AVM-Advogados (Angola); Martín Bensadon, Marval O'Farrell & Marval (Argentina); Armen Melkumyan, Prudence CJSC (Armenia); Michael Back, Freehills (Australia); Wolfgang Faber, University of Salzburg (Austria); Rashid Aliyev, Baker & McKenzie, Baku, CIS Limited (Azerbaijan); Saifuddin Mahmood, Hassan Radhi & Associates (Bahrain); Al Amin Rahman and Sabrina Zarin, FM Associates (Bangladesh); Amina Khatoon, Doulah & Doulah (Bangladesh); Aliksandr Danilevich, Belarusian State University (Belarus); Sergei Makarchuk, Law Firm CHSH Cerha Hempel Spiegelfield Hlawati, Minsk Office (Belarus); Caroline Cauffman, Maastricht University and University of Antwerp (Belgium); Tania Moody, Barrow & Williams (Belize); Mario Kempff and Patricio Rojas, CR & F Rojas Abogados (Bolivia); Meliha Powlakić and Darja Softić Kadenić, University of Sarajevo (Bosnia and Herzegovina); Rafael Gagliardi and Newton Marzagão, Demarest & Almeida Advogados (Brazil); Dimitar Stoimenov, Peterka & Partners Law Firm (Bulgaria); Camille Razalison and Adrien Rangira, John W Fooks & Co (Burkina Faso and Ivory Coast); Jehny Ramiandrisoa and Adrien Rangira, John W Fooks & Co (Burundi); Nimrod E Mkono, Gilbert LP Nyatanyi, Lambert Nigarura, and René-Claude Madebari, Mkono & Co. Burundi (Burundi); Eddy Ratianarivo and Adrien Rangira, John W Fooks & Co (Cameroon); Matías Ignacio De Marchena Vicuña, Claro y Cía (Chile); Elliott Youchun Chen, Beijing Jun Ze Jun Law Offices, Shenzhen (China); Jie Chen, Jun He Law

Offices (China); Ernesto Rengifo García, Universidad Externado de Colombia and Garrido & Rengifo Abogados (Colombia); Adrián Álvarez Orellana, Consortium Laclé& Gutiérrez (Costa Rica); Eduardo Calderon, Adriana Castro and Manuel Santos, BLP Abogados (Costa Rica); Hano Ernst, University of Zagreb (Croatia); Tatjana Josipovic, University of Zagreb (Croatia); Stéphanie Laulhé Shaelou, University of Central Lancashire (Cyprus); Michaela Zuklínová, Charles University (Czech Republic); Arnauld Kayembe Tabu, University of Kinshasa and Kayembe Tabu Law Office Kinshasa (DRC) (Democratic Republic of Congo); Bukayafwa Deo Gratias, MBM-Conseil SCA (Democratic Republic of Congo); Francois Butedi, SADC-CNGO (Democratic Republic of Congo); Phebe Mavungu Clément, University of the Witwatersrand (Democratic Republic of Congo); Ole Borch, Bech-Bruun (Denmark); Tobias Vieth, Danders & More (Denmark); Laura Bobea Escoto, Medina & Rizek, Abogados (Dominican Republic); Pablo Ortiz-Garcia and Luis Marin-Tobar, Perez Bustamante & Ponce (Ecuador); Roque Albuja, Quevedo & Ponce (Ecuador); Ahmed El-Gammal and Nihal Madkour, Shalakany Law Office (Egypt); Monica Machuca, Aczalaw (El Salvador); Kai Kullerkupp, University of Tartu (Estonia); Liina Linsi and Monika Tamm, Lawin (Estonia); Molla Mengistu, School of Law, Addis Ababa University (Ethiopia); Muradu A Srur, Addis Ababa University, School of Law (Ethiopia); Jarmo Tuomisto, University of Turku (Finland); Sophie Tavergnier and Philippe Xavier-Bender, Gide Loyrette Nouel (France); David Kakabadze, Georgian Legal Partnership (Georgia); Vanessa Pickenpack and Klaus Guenther, Oppenhoff & Partners (Germany); Ellen Bannerman, Bruce-Lyle, Bannerman & Associates (Ghana); Norma Dawson, Queen's University Belfast (Great Britain and Northern Ireland); Ben McFarlane, University College London (Great Britain, Hong Kong and Malaysia); Alexandra Economou, Drakopoulos Law Firm (Greece); Cristóbal Fernández and María

de la Concepción Villeda, Mayora & Mayora, S.C. (Guatemala); Juan José Alcerro Milla, Carolina Aguirre Larios and Melissa Amaya Pastrana, Aguilar Castillo Love (Honduras); Gabor Fejes, Oppenheim and Partners Freshfields Bruckhaus Deringer (Hungary); Ciccu Mukhopadhaya and Surjendu Das, Amarchand Mangaldas and Suresh A. Shroff and Company, New Delhi (India); Nafis Adwani, Ali Budiardjo, Nugroho, Reksodiputro (Indonesia); Behrooz Akhlaghi, Shahrzad Majdameli, Encyeh Seyed Sadr, Camellia Abdolsamad, Ali Shahabi, Seyed Iman Mohamadian, Dr. Behrooz Akhlaghi & Associates (Iran); Caterina Gardiner, National University of Ireland, Galway (Ireland); Amnon Lehavi, Radzyner School of Law, Interdisciplinary Center (IDC) Herzliya (Israel); Alessio Greco, Istituto Mediterraneo per i Trapianti e Terapie ad Alta Specializzazione (Italy); Courtney B. Smith, Foga Daley, Attorneys at law (Jamaica); Hiroo Atsumi, Atsumi & Sakai (Japan); Bassam Abu-Rumman, Ali Sharif Zubi Advocates & Legal Consultants (Jordan); Dariya Saginova, Grata Law Firm (Kazakhstan); Saule Massalina, Salans law firm (Kazakhstan); Valikhan Shaikenov, Aequitas Law Firm (Kazakhstan); Peter Gachuhi, Kaplan and Stratton Advocates (Kenya); Atdhe Dika and Vegim Kraja, Kalo & Associates Law Firm (Kosovo); Al Noor, Al -Twaijri and Partners Law Firm (Kuwait); Babitskaya Elena Viktorovna, Veritas Law Agency Limited Liability Company (Kyrgyz Republic); Kanat Seidaliev, Grata Law Firm (Kyrgyz Republic); Nurlan Alymbaev, Law Firm Alymbaev (Kyrgyz Republic); Julija Kolomijceva, bnt Klauberg Krauklis Zab (Latvia); Tiisetso Sello-Mafatle, Sello-Mafatle Attorneys (Lesotho); Jaunius Gumbis, Lawin Lideika, Petrauskas, Valiūnas and partners (Lithuania); Simas Gudynas, Lawin Lideika, Petrauskas, Valiūnas and partners (Lithuania); Alex Schmitt, Bonn Schmitt Steichen (Luxembourg); Nenad Gavrilovic, Faculty of Law 'Iustinianus Primus', Skopje, University 'Ss Cyril and Methodius' (Macedonia); Fatima Diarra, Cabinet d'Avocats

Sim (Mali); Jotham Scerri-Diacono, Ganado Advocates (Malta); Vincent Chong Leung, Juristconsult Chambers, cabinet d'avocats (Mauritius); Héctor Calatayud Izquierdo, Basham, Ringe y Correa (Mexico); Octavian Cazac and Vladimir Palamarciuc, Turcan Cazac Law Firm (Moldova); Nergui Enkhsetseg, Anand & Batzaya Advocates (Mongolia); Neda Ivovic, University of Donja Gorica (Montenegro); Zohra Hasnaoui and Ahmad Hussein, Hasnaoui Law Firm AGIP (Abu-Ghazaleh Intellectual Property - Morocco) (Morocco); Carlos de Sousa E Brito, Carlos de Sousa E Brito & Associados (Mozambique); Win Win Aye and Khin Wint Maw, Kelvin Chia Yangon Limited (Myanmar); Willem Bodenstein and Mike Bottger, Lorentz Angula Incorporated (Namibia); Arthur Salomons, University of Amsterdam (Netherlands); Roger Tennant Fenton, Southern Cross Chambers (New Zealand); Minerva Bellorin R., Diogenes E, Velasquez V, and Mazziel A Rivera Núñez, Aczalaw (Nicaragua); Lydia Rosoanirina and Adrien Rangira, John W Ffooks & Co (Niger); Joseph Eimunjeze, Udo Udoma & Belo-Osagie (Nigeria); Jan-Ove Færstad, University of Bergen (Norway); Alastair R. Neale and Ruqaya Al Khanbashi, Jihad Al Taie Law Office (Oman); Zaid Al Khattab, Talala Abu Ghazaleh & Co (Oman); Ahsan Zahir Rizvi, Rizvi, Isa, Afridi & Angell (Pakistan); Ivette E Martínez, Patton Moreno & Asvat (Panama); Ramon Varela, Morgan & Morgan (Panama); Esteban Burt, Peroni Sosa Tellechea Burt & Narvaja (Paraguay); Manuel Villa-García Noriega, Estudio Olaechea S Civil de RL (Perù); Eduardo de los Angeles, Romulo Mabanta Buenaventura Sayoc & de los Angeles (Philippines); Jerzy Andrzej Pisuliński and Michal Kucka, Jagiellonian University in Cracow (Poland); Margarida Costa Andrade, University of Coimbra (Portugal); Monica Jardim, University of Coimbra (Portugal); Thelma Rivera, Goldman, Antonetti & Córdova, PSC (Puerto Rico); Ejan Mackaay, Université de Montréal (Quebec, Canada); Cristina Bolea and Vlad Peligrad, Clifford Chance Badea SCA (Romania); Magdalena

Raducanu, Salans Moore si Asociatii SCPA (Romania); Sergey Strembelev and Natalia Dialektova, Egorov Puginsky Afanasiev & Partners Law Offices (Russia); Vannissa Rakotonirina and Adrien Rangira, John W Ffooks & Co (Rwanda and Senegal); Stephen Matthews and Abdullah Al Saab, The Law Office of Mohammed S Al-Rasheed (Saudi Arabia); Andrew Steven, University of Edinburgh (Scotland, UK); Nataša Lalatović Đorđević, Moravčević Vojnović and partners in cooperation with Schoenherr (Serbia); Žarko S. Borovčanin, Jankovic, Popovic & Mitic od (Serbia); Oredola Martyn, Clas Legal (Sierra Leone); Yi-Ling Teo, Gateway Law Corporation (Singapore); Katarína Čechová, Čechová & Partners (Slovak Republic); Tomaz Kerestes, University of Maribor (Slovenia); Athol Gordon, Bowman Gilfillan Attorneys (South Africa); Chun-Wook Hyun, Kim & Chang (South Korea); Carlos Díez Soto, Technical University of Cartagena, and Isabel González Pacanowska, University of Murcia (Spain); John Wilson, John Wilson Partners, Attorneys at Law & Notaries Public (Sri Lanka); Martin Lilja, Salzburg University (Sweden); Bénédict Foëx, University of Geneva (Switzerland); Deema Abu Zulaikha, Tag-Legal Syria (Syria); Horace Chen, Tsar & Tsai Law Firm (Taiwan); Kamanga Wilbert Kapinga, CRB Africa Legal (Tanzania); Cynthia M Pornavalai, Tilleke & Gibbins (Thailand); Phisit Dejchaiyasak, Weerawong, Chinnavat and Peangpanor Limited (Thailand); Stephen A Singh, Johnson, Camacho and Singh (Trinidad and Tobago); Issam Mokni, Ferchiou & Associés (Tunisia); Yesim Atamer, Ece Bas, Başak Başoğlu, Meliha Sermin Paksoy, and Pinar Yazici, Istanbul Bilgi University (Turkey); Emmanuel Kasimbazi, Makerere University (Uganda); Oleg Boichuk, Magisters (Ukraine); Rami Abdellatif and Mohammed Kamran, Al Tamimi Advocates & Legal Consultants (United Arab Emirates); Steven Walt, University of Virginia School of Law (United States); Pedro J Montano, Universidad de la República and Scelza & Montano (Uruguay); Juan Enrique Aigster

and José Alberto Ramírez, Hoet Pelaez Castillo & Duque Abogados (Venezuela); Dang The Duc and Tuong Tran, Indochine Council (Vietnam); Sydney Chisenga, Corpus Legal practitioners (Zambia); Peter Lloyd, Gill, Godlonton & Gerrans (Zimbabwe).