THE DIVERSITY OF NORM PSYCHOLOGIES: A CHALLENGE FOR THE LAW

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"In most times and places, in-group loyalty and family honor have trumped impartial fairness."[1]

ABSTRACT

Can we craft a coherent set of laws applicable to populations with deep cultural diversity? The full force of this question—call it the generalization challenge*—has emerged recently thanks to advances in the sciences of the human, especially theories of neuroscience and psychology framed by theories of biological and especially cultural evolution. The goal of this Article is to describe enough of those advances to make clear the force of the challenge. The motivation is simple: as we endeavor to imagine the future of law in light of discoveries in neuroscience and related disciplines, being apprised of the generalization challenge may increase our chances of discovering an effective solution.*

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1. JOSEPH HENRICH, THE WEIRDEST PEOPLE IN THE WORLD: HOW THE WEST BECAME PSYCHOLOGICALLY PECULIAR AND PARTICULARLY PROSPEROUS 294 (2020).

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INTRODUCTION

I take it for granted that any law, or any substantive portion of any legal system, is acceptable only if it is psychologically fitting. A law that assumes we are possessed of capacities we do not possess is often irrelevant, perhaps pernicious, and indefensible.[2] Further, a law that overlooks the practical effects of psychological capacities we do possess is unjustifiable. A necessary condition on almost any defensible law, it seems, is that it fit, psychologically speaking, the type of organism to which it is applied.[3] Yet, according to recent findings in sciences of the human—findings that bear on human nature, especially neuroscience and psychology framed by theories of biological and cultural evolution—there are substantial psychological differences across ethnolinguistic lineages within Homo sapiens.[4] There are, in particular, striking differences in so-called *norm psychologies*, some of which are substantial enough to generate a challenge for the law.[5] This difficulty, which I refer to as the generalization challenge, questions the feasibility of crafting a coherent set of laws applicable to a deeply culturally diverse society.

I shall formulate the challenge this way:

> (1) A set of legal norms is justified only if there exists (a) a sufficient fit of those norms to the actual psychological constitution of the population and (b) a sufficient degree of psychological homogeneity across the population.
>
> (2) According to findings in sciences of the human, (b) is not satisfied in ethnolinguistically diverse populations due to the evolved diversity of norm psychologies; nor is (b) satisfied in a

2. Typically indefensible, but perhaps not always. Are there, or might there be, laws that achieve their desired functions *only because* they are formulated on the assumption of capacities we in fact lack?

3. The qualification—the "almost"—emphasizes the possibility acknowledged in the previous footnote that some laws might be effective only if premised on a false assumption about the capacities or incapacities of most citizens.

4. *See infra* Part I.

5. *See infra* Parts III-V.

> single lineage in which the norm psychology of a substantial proportion of individuals is fragmented or disunified.[6]
>
> (3) In consequence, (a) is not satisfied in those populations. Legal norms in ethnolinguistically diverse populations are likely unjustified, as are norms in a single lineage comprising normatively disunified individuals.

I shall assume the truth of the first proposition and focus on the second and third. In Part I, I sketch three sets of experiments that demonstrate the diversity of norm psychologies in present-day ethnolinguistic lineages. The goal is to motivate the generalization challenge not by armchair speculation but with a theoretical framework supported by experimental evidence. Part II raises an obvious but important question concerning the depth and persistence of diverse norm psychologies, and Parts III-V attempt to answer that question. I will, in addressing that question, describe essential assumptions and empirical findings from theories of cultural evolution and other sciences of the human. The force of the generalization challenge, by the close of the Conclusion, should be difficult to miss.

I. EVIDENCE OF DIVERSE NORM PSYCHOLOGIES

Vivid glimpses of the diversity of norm psychologies across ethnolinguistic lineages are provided by recent experiments. It suffices for present purposes to describe just three sets of experiments which, taken together, demonstrate substantive cultural-historical differences in (i) moral motivations, (ii) the role of intentions in judgments of moral culpability, and (iii) attitudes and practices concerning punishment.[7] Before describing the experiments, however, a bit of clarification is in order concerning the relevant notions of "norms" and "norm psychology."[8] I will also introduce a historical assumption thought to explain the evolutionary

6. For discussion of normatively disunified persons, see *infra* Part IV.
7. *See infra* Part I.B.
8. *See infra* Part I.A.

emergence of the cultural diversity observed in the experiments discussed here.[9]

A. Norm Psychology

The relevant sorts of *norms* are intersubjective and relative to specific social groups, and they comprise some degree of internal complexity.[10] They comprise sets of shared expectations regarding the actions and attitudes of some or all group members.[11] These expectations are in turn based upon common beliefs, practices, and motivations that tend to be self-reinforcing and self-perpetuating.[12] The within-group functions of such shared expectations, beliefs, motivations, and practices include minimizing within-group conflicts, heightening and stabilizing within-group cohesion and cooperation, and conducing to the survival and perhaps the selective advantage of the group.[13] Indeed, according to leading theorists of cultural evolution, cultural group selection has been an especially powerful process in the evolution of human sociality, a process in which the norms of one group enable it to flourish relative to other groups.[14] Robert Boyd, for instance, as well as Joseph Henrich, Sarah Matthew, Peter Richerson, and others argue that within-group norms *can* create, and in empirical fact *have* created, sufficiently stable differences between neighboring groups to give rise to such cultural group selection.[15] Examples include norms for dividing labor, sexual relations, child rearing, food production, food sharing, the imposition of sanctions, and more.[16]

If norms comprise sets of shared expectations relevant to group cooperation, a *norm psychology* comprises a set of mechanisms for

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9. *See infra* Part I.B.2.

10. *See* DAVID J. SCHNEIDER, INTRODUCTION TO SOCIAL PSYCHOLOGY 280 (1988).

11. *Id.*

12. *See* HENRICH, *supra* note 1, at 71.

13. *See* Daniel C. Feldman, *The Development and Enforcement of Group Norms*, 9 ACAD. MGMT. REV. 47, 48 (1984).

14. *See, e.g.*, ROBERT BOYD, A DIFFERENT KIND OF ANIMAL: HOW CULTURE TRANSFORMED OUR SPECIES 98-106 (2018).

15. *See generally* Peter Richerson et al., *Cultural Group Selection Plays an Essential Role in Explaining Human Cooperation: A Sketch of the Evidence*, 39 BEHAV. & BRAIN SCIS. 1 (2016).

16. *See id.* at 8, 11, 13-15.

acquiring and adhering to those norms.[17] Those mechanisms endow organisms with a range of capacities, including the ability to identify shared norms in the course of interacting socially; the natural disposition to learn and internalize those norms; and the disposition to act on those norms, including the affective and cognitive dispositions to call out and sanction those who violate norms—especially in populations in which free riders pose a threat to group cohesion.[18]

The apparently deep-seated norm of impartiality in Western ethical and political theorizing is illustrative. An impartial concern or respect for all persons, or for all practically rational beings (which may include nonhumans), is taken as a core condition of adequacy for any theory of morality or justice.[19] More modestly, the perspective of an ideally sympathetic observer is taken as a core condition of adequacy.[20] Either way, it appears that a prominent norm, embedded in the psychology of many Western societies today, is that any action or policy or institution that is partial, that fails to include all rational beings or the perspective of an ideally sympathetic observer within its scope, should be regarded with suspicion and must, to earn its justificatory keep, provide compelling grounds for its breach of impartiality.[21]

Yet theories of cultural evolution make clear that this assumption of wide-scope impartiality is by no means universally endorsed across our species today.[22] This bears on the large-canvas historical

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17. *See* Maciej Chudek & Joseph Henrich, *Culture-Gene Coevolution, Norm-Psychology and the Emergence of Human Prosociality*, 15 TRENDS COGNITIVE SCIS. 218, 218-20 (2011).

18. *See* JOSEPH HENRICH, THE SECRET OF OUR SUCCESS: HOW CULTURE IS DRIVING HUMAN EVOLUTION, DOMESTICATING OUR SPECIES, AND MAKING US SMARTER 188-89 (2016); *see also* BOYD, *supra* note 14, at 96-106, 118-20.

19. *See, e.g.*, IMMANUEL KANT, GROUNDWORK OF THE METAPHYSICS OF MORALS 16-17 (Mary Gregor & Jens Timmermann eds. & trans., 2012).

20. *See, e.g.*, ADAM SMITH, THE THEORY OF MORAL SENTIMENTS 13-17 (D.D. Raphael & A.L. Macfie eds., 1976).

21. For a discussion of impartiality in the context of the judiciary, see generally William Lucy, *The Possibility of Impartiality*, 25 OXFORD J. LEGAL STUD. 3 (2005); Kathy Mack & Sharyn Roach Anleu, *Performing Impartiality: Judicial Demeanor and Legitimacy*, 35 L. & SOC. INQUIRY 137 (2010); Melissa E. Loewenstern, Note, *The Impartiality Paradox*, 21 YALE L. & POL'Y REV. 501 (2003).

22. *See* Michelle Ann Kline et al., *Variation Is the Universal: Making Cultural Evolution Work in Developmental Psychology*, 373 PHIL. TRANSACTIONS ROYAL SOC'Y 20170059, 2-3 (2018).

assumption mentioned above and discussed below.[23] According to Henrich, wide-scope impartiality became a core component in the norm psychology of some ethnolinguistic lineages mainly as an effect of the rise of Christianity and, in particular, what eventually became the Western Catholic Church.[24] Prior to the 800-year period between, roughly, the years 400 and 1200 CE during which the Western Church took hold in parts of Europe, most human societies were structured almost entirely upon kinship relations.[25] In pre-Christian Europe, norms of partiality were foundational.[26] All of one's obligations—whom one could marry, where one could live, ownership responsibilities, who had legal decision-making power over whom, et cetera—were defined by reference to one's blood- and affinal-relations, as well as relations to other tribal or clan members.[27] Norms of impartiality, if any, were limited to the treatment of members within the same familial or social class within the same group, tribe, or clan.[28]

The crucial consequence of this dramatic difference between Christian and pre-Christian Europe, at least for present purposes, is twofold. First, most contemporary ethnolinguistic lineages that exist today descend from societies altered little or not at all by the rise of Western Catholicism.[29] In consequence, most persons alive today are endowed with a norm psychology different from that assumed by Smith or Kant and their successors.[30] Kin-based partiality appears to be normatively deep, if not normative bedrock, for most humans today.[31] Second, social scientists are beginning to

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23. *See infra* Part I.B.2.

24. *See* HENRICH, *supra* note 1, at 191-92.

25. *Id.* at 162-63.

26. *Id.*

27. *Id.*

28. *Id.*

29. *See* Joseph Henrich et al., *Most People Are Not WEIRD*, 466 NATURE 29, 29 (2010) (defining "WEIRD" as "people from Western, educated, industrialized, rich and democratic ... societies").

30. *Id.*

31. For evidence of this claim, see *id.*; *see also* Jeffrey J. Arnett, *The Neglected 95%: Why American Psychology Needs to Become Less American*, 63 AM. PSYCH. 602, 608-09, 611 (2008). It goes without saying that the extent to which many countries today qualify as WEIRD is a matter of degree. The WEIRD/non-WEIRD distinction refers to a continuum, or a messy set of continua. For an extremely interesting attempt at quantifying the extent to which countries qualify as WEIRD, see generally Michael Muthukrishna et al., *Beyond Western, Educated,*

discern this and other norm-related differences in contemporary societies insofar as they can compare divergent ethnolinguistic lineages of Homo sapiens alive today. This, in fact, is the general format of most of the experiments I am about to describe.

B. Experimental Evidence

Most of these experiments compare diverse lineages. Some lineages descend from ancestors directly affected by the rise of the Western Church. Others descend from ancestors more or less untouched by the Church, whose moral and legal norms, as a result, tend to retain a discernible partiality toward kin. Given this comparative framework, it is difficult to overstate the implications of these experiments for understanding the diversity of norm psychologies.

1. First Set: Moral Motivation

In the first experiment, subjects from fifty countries[32] answered questions concerning the following vignette:

> You are riding in a car driven by a close friend. He hits a pedestrian. You know he was going at least 35 miles per hour in an area of the city where the maximum allowed speed is 20 miles per hour. There are no witnesses. His lawyer says that if you testify under oath that he was only driving 20 miles per hour it may save him from serious consequences. What right has your friend to expect you to protect him?[33]

The subjects in this experiment could select one of the following responses to the vignette:

> (1a) My friend has a definite right as a friend to expect me to testify to the lower figure [20 miles per hour].

Industrial, Rich, and Democratic (WEIRD) Psychology: Measuring and Mapping Scales of Cultural and Psychological Distance, 31 PSYCH. SCI. 678 (2020).

32. FONS TROMPENAARS & CHARLES HAMPDEN-TURNER, RIDING THE WAVES OF CULTURE: UNDERSTANDING DIVERSITY IN GLOBAL BUSINESS 45 (4th ed. 2021).

33. *Id.* at 44.

> (1b) He has some right as a friend to expect me to testify to the lower figure.
>
> (1c) He has no right as a friend to expect me to testify to the lower figure.[34]

After choosing from among those responses, subjects were asked what they think they would do if faced with this situation: Would they testify that their friend was driving at the lower speed, or would they refuse to testify?[35]

The results are striking for their unambiguous cultural diversity. Well over 90 percent of persons in Canada, Switzerland, and the United States chose either the second or third response and said they would refuse to testify in support of their friend.[36] This is prima facie evidence of a psychology in which the norm of impartiality is potent enough to override one's affections for and obligations to one's close friends. In other countries, such as South Korea, Russia, and Venezuela, by contrast, only around one-third of persons indicated such impartiality.[37] Around two-thirds of persons in those countries said they would lie in court to save their friends from legal consequences.[38] These results[39] converge with data from the World Economic Forum concerning hiring practices. Countries with stronger kin-based norms, for instance, hire more relatives into senior management positions.[40] Although it is, perhaps, wise to hire

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34. *Id.*

35. *See id.*

36. *See id.* at 45.

37. *See id.* at 45-46.

38. *See id.*; *see also* HENRICH, *supra* note 1, at 208-09 (citing Jonathan Haidt & Jesse Graham, *When Morality Opposes Justice: Conservatives Have Moral Intuitions that Liberals May Not Recognize*, 20 SOC. JUST. RSCH. 98, 103-05, 108 (2007)) (describing converging results from Haidt and Graham's analyses of the Moral Foundations Questionnaire).

39. Actually, the results of this experiment, updated in the book's fourth edition, are noteworthy for their complexity. For instance, only 43 percent of subjects in Italy, a country undoubtedly affected by the rise of Western Catholicism, said they would refuse to testify to protect their friend. More than half were apparently willing to act in a clearly partial manner. *See* TROMPENAARS & HAMPDEN-TURNER, *supra* note 32, at 45. Perhaps Henrich's historical hypothesis needs to be supplemented with other causal factors? Or perhaps recent patterns of migration from non-Western countries to Italy suffice to resolve the apparent challenge to Henrich's view?

40. HENRICH, *supra* note 1, at 208; *see also* Jonathan F. Schulz et al., *The Church, Intensive Kinship, and Global Psychological Variation,* 366 SCIENCE 707, 710-12 (2019).

trustworthy persons into positions of authority, Westerners who have internalized norms of impartiality would nonetheless judge differently.

Another experiment in this first set was designed to tease out the diversity of moral motivations by looking at patterns of actual behavior, rather than answers to questionnaires. For example, consider behaviors that produce public goods. Donating blood is a public good despite being costly in terms of time, discomfort, and possible (though unlikely) complications.[41] It is also anonymous, as donors rarely know who will receive the blood they donate.[42] When Henrich and colleagues examined data from the World Health Organization concerning blood donations across 141 countries, they uncovered a clear correlation between strong, kin-based norms and infrequent blood donations.[43] Donations in countries with weak family ties were admittedly low, at roughly twenty-five donations per 1000 people per year, but donations in countries with the strongest indicators of kinship were much lower.[44] They were, in fact, close to zero.[45] Almost no blood donations for unknown persons are made in countries with strong kin-based institutions, irrespective of various factors such as religion, geography, and ecology.[46]

The extent to which a society is structured by kin-based relations predicts with accuracy the relative frequencies of blood donations. However, weak family ties do *not* predict frequent donations. Societies with relatively weak kin-based norms vary widely in the frequency of blood donations.[47] Henrich tentatively concluded that psychologies constituted more by impartial norms—those influenced less by kin-based norms—are significantly more inclined toward actions that contribute to the public good.[48] In addition, Henrich

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41. *See, e.g.*, HENRICH, *supra* note 1, at 212; Antonio Crocco & Domenico D'Elia, *Adverse Reactions During Voluntary Donation of Blood and/or Blood Components. A Statistical-Epidemiological Study*, 5 BLOOD TRANSFUSION 143, 145-46 (2007).

42. *E.g.*, Ronald Sullivan, *Blood Donors' Anonymity Is Upheld*, N.Y. TIMES (July 29, 1987), https://www.nytimes.com/1987/07/29/nyregion/blood-donors-anonymity-is-upheld.html [https://perma.cc/L9RQ-TA5C].

43. HENRICH, *supra* note 1, at 212-13.

44. *Id.*

45. *Id.*

46. *Id.*

47. *Id.* at 213.

48. *See id.*

concluded that the observed variation regarding *which* particular public good actions are performed is explicable by other, yet-to-be measured variables.[49]

2. Second Set: Intentions in Moral Judgments

In the second set of experiments, researchers presented two similar vignettes in which only a single variable is altered.[50] Both scenarios involve a person taking the possessions of another person.[51] In one case the taking is intentional—an unambiguous instance of deliberate theft—while in the other case the taking is clearly accidental.[52] As with the first set of experiments, subjects in this experiment come from societies with contrasting histories and social norms.[53] Some subjects live in countries structured by intensive kin-based relationships, while others live in societies structured more by norms of impartiality.[54] The key question is whether subjects assess the moral status of the two vignettes similarly or differently.[55]

Unsurprisingly, subjects in Western countries are likely to judge that the moral status of the two cases differs substantially.[56] Intentional theft is prima facie morally blameworthy, while unintentional taking is either not blameworthy or far less so.[57] That is indeed what this experiment reveals. Out of the ten countries covered in this study, two were Western (or at least Western-leaning): the United States and Ukraine.[58] Subjects in both countries drew a strong distinction in their moral assessments of the two vignettes.[59] What is remarkable, however, is that subjects in the other eight countries drew either a significantly weaker distinction or, in the case of subjects from Fiji, Namibia, New

49. *See id.* at 213-14.
50. *Id.* at 49.
51. *Id.*
52. *Id.*
53. *Id.* at 50.
54. *See id.* at 50-51.
55. *Id.* at 50.
56. *Id.* at 49-51.
57. *Id.* at 50-51.
58. *Id.*
59. *Id.* at 50.

Ireland, and Tanzania, no distinction at all![60] In countries little affected by the historical erosion of kin-based relations due to the rise of Western Catholicism, accidental taking is judged as morally equivalent to intentional theft.[61] The prima facie significance of this kind of ethnolinguistic diversity for the law is difficult to exaggerate given the essential role of intentions in establishing criminal liability in Western legal systems.[62]

Other experiments in this set focused on the same issue—the role of intentions in moral judgments—with regard to different categories of morally charged actions. In addition to stealing versus accidentally taking another person's belongings, investigators also collected judgments of intentional versus unintentional (1) attempts to kill via actions that carry a high probability of causing death, like poisoning a community water well; (2) attempting to assault another person; and (3) violating a food taboo.[63] The results from the latter categories, especially killing and assaulting, converge on the same results concerning stealing: kin-structured societies tend, in their moral judgments, to treat the unintended harms as equivalent to those that were intended, whereas non-kin-structured societies tend otherwise.[64] These results hold even when potential confounds, such as differences in educational backgrounds, are accounted for.[65]

It is clear from these experiments that citizens of societies structured by strong kin-based norms afford little significance to intentions in their moral judgments, while those in societies with weak kin-based norms afford substantial moral significance to intentions. What explains this dramatic difference in norm psychologies? Henrich suggests two potential factors.

The first is that intensive kinship norms regulate members of a social group far more by shame than guilt, whereas norms of impartiality in groups with weak kin-based relations regulate

60. *Id.* at 50-51.

61. *See* H. Clark Barrett et al., *Small-Scale Societies Exhibit Fundamental Variation in the Role of Intentions in Moral Judgment*, 113 PROC. NAT'L ACAD. SCIS. 4688, 4691-93 (2016)..

62. *See* CRIMINAL LAW AND ITS PROCESSES: CASES AND MATERIALS 258 (Sanford H. Kadish et al. eds., 10th ed. 2017).

63. Barrett et al., *supra* note 61, at 4689-90.

64. *Id.* at 4690-91.

65. HENRICH, *supra* note 1, at 220.

members far more by guilt.[66] In kin-intensive societies, individuals attend mainly to the effects that their actions have on their kin.[67] The merit or demerit of their actions is assessed according to the effects on the group as a whole or at least on some portion of the whole.[68] If, for instance, the action of a Yasawan male hunter in Fiji disappoints or besmirches the reputation of his kin or clan, he is likely to experience shame.[69] His intentions, whether good or ill, will not alter the burden inflicted on the group.[70] More generally, the experience of shame need not track the intentions with which one acts, nor even the performance of an action.[71] Possessing a trait that brings disrepute to one's parents or extended kin—a lack of courage, talent, or beauty—is sufficient to trigger shame.[72]

Guilt, by contrast, typically tracks intentions.[73] Why do persons who live in groups regulated by impartial norms tend to experience guilt more than shame? If the norms internalized in that group apply more or less equally to kin and non-kin (including strangers), then the target of one's attention is indeterminate or at least diffuse.[74] It may include persons unknown to us.[75] Even in relatively small clans, however, it is challenging to assess the effects of my action on everyone, and in clans of any size it is practically impossible. When this is the case—when assessing the actual practical effects of our actions on all or most members of our social group is not feasible—we can, at least, assess the level of intentional good will or intentional malice with which we act. If, for example, I act with the sincere intention to benefit as many people as possible, then, even if you cannot discern the actual effects of my action, you have some grounds—the sincerity of my intentions—for morally judging my action.[76] Intentions, on this view, are a heuristic with

66. *Id.* at 221.
67. *See id.* at 34-35, 202.
68. *See id.* at 34.
69. *See* HENRICH, *supra* note 18, at 140-41.
70. *See id.* at 144, 188, 199.
71. HENRICH, *supra* note 1, at 34-35, 201-02.
72. *See id.* at 34, 201-02.
73. *See id.* at 34-36.
74. *See id.* at 36.
75. *See id.* at 34-35.
76. *See id.* at 219-20.

which to assess the moral value of an action by instead assessing the quality of the intention that likely caused the action.[77]

The second factor suggested by Henrich concerns analytic thinking. Suppose we understand "analytic" thinking as essentially a matter of classifying objects, actions, or events as tokens of relatively abstract types.[78] For example, when shown a picture of three objects—a rabbit, carrot, and cat—and asked which of the other two objects "goes with" the rabbit, analytic thinkers will pick the cat.[79] Why? Because rabbits and cats are both tokens of the general type "mammal" or even "animal."[80] But what if subjects pick the carrot instead of the cat? In that case, it seems reasonable to say that objects, actions, or events are classified not as tokens of an abstract type but rather in terms of concrete, practical relationships that regularly obtain.[81] A rabbit "goes with" carrots because of the very concrete relationship between the thing that eats and things that are eaten.[82] This latter way of thinking is "holistic."[83]

With this analytic/holistic distinction on the table, experiments show that holistic thinking is more pervasive in kin-based societies and analytic thinking is more pervasive in less kin-based societies.[84] This difference accords with the explanation that Henrich's first factor offers. In a society structured mainly with kin-based norms, the moral assessment of my action is determined largely by its effects on my group.[85] Hence the affective efficacy of shame. That

77. *See* Jeff Elison, *Shame and Guilt: A Hundred Years of Apples and Oranges*, 23 NEW IDEAS PSYCH. 5, 25 (2005).

78. HENRICH, *supra* note 1, at 53.

79. *Id.*

80. *Id.* But that is not all. As Henrich notes, studies by Richard Nisbett and colleagues reveal a striking difference between Euro-Americans and East Asians in what they attend to and how they perceptually process images and objects such as a picture of a street scene. *Id.* (citing Yuri Miyamoto et al., *Culture and the Physical Environment: Holistic Versus Analytic Perceptual Affordances*, 17 PSYCH. SCI. 113, 118 (2006)). Euro-Americans attend to and interpret the scene in terms of individual objects, properties of those objects, and the abstract categories to which those objects belong. *See id.* By contrast, East Asians attend to the scene in terms of the whole and interpret objects not in terms of their individual properties but instead in terms of their relations to other objects and the larger whole. *See id.*

81. *Id.*

82. *Id.*

83. *Id.* at 53-55. Henrich calls the rabbit, carrot, and cat test the "Triad Task." *Id.* at 53.

84. *See id.* at 53-54 fig. 1.9 (depicting data from the Triad Task administered to over 3,000 subjects).

85. *See id.* at 208-09.

affective efficacy, however, does not travel alone. Persons raised to judge their actions by the effects on one's clan are also likely to acquire causally relevant perceptual and cognitive dispositions—dispositions attuned to the psychology of concrete, family-related relationships.[86] Thus, they are likely to pair a carrot but not a cat with the rabbit, given the concrete relationship between eaters and the things eaten. By contrast, persons raised to judge actions impartially, in terms of wide-scope norms, are likely to acquire the disposition to think in terms of relatively abstract categories, including the category of "all persons."[87] That category, as just noted, is often impractical. It is typically not possible to assess the effects of any single action on all persons. A suitable proxy, it seems, are the intentions on which we act. The moral assessment of an action, given the prevalence of norms that tend toward impartiality, is based on relatively abstract generalizations concerning the apparent intentions with which persons act and the moral value of their actions.[88]

3. Third Set: Punishment

As with moral motivation and the role of intentions in moral judgments, there is a deep difference between kin-based and non-kin-based societal views regarding the status of punishment. One such difference concerns the punishment of persons who are not members of a person's own clan or society. As Henrich describes, in societies with weak kin-based norms it is not merely permissible, but in some circumstances admirable, and perhaps obligatory, to punish someone who violates a norm, even if the violator is a complete stranger and even if the violation poses no direct harm to the person who punishes.[89] If I see a stranger shoplifting in the grocery store, I will likely feel compelled to report what I see to the store manager. If I turn a blind eye to the violation, I am likely to feel guilty. These affective responses are evidence that I have internalized a social norm in which third-party punishment is

86. *See id.* at 208-09, 216.
87. *See id.* at 43-45.
88. *Id.* at 219-20.
89. *Id.* at 216-17.

expected, even required.[90] By contrast, in societies with strong kin-based norms, punishment is largely insular.[91] Punishment of persons within a person's clan typically falls to tribal elders and is unlikely to provoke offense, while punishing a member of a different clan is bound to offend.[92] It is bound to offend members of the other clan enough to result in violent retribution against the outsider, would-be punisher.[93] This is the key difference: third-party punishment that extends beyond one's kin, while sanctioned in low-kin societies, is regarded as an affront, even a threat, in high-kin societies.[94]

Evidence of this difference comes from Public Goods Games.[95] The Games are designed to force subjects to choose between acting from self-interest and acting for the public good.[96] In one version, four players, all strangers to each other, are given the same quantity of money.[97] Each player is asked to decide how much of the money he or she is willing to contribute to a public-goods project.[98] Players are informed that after contributions are made, the total sum is increased by 50 percent and the new, increased sum is then distributed equally to all four players.[99] The crux of the game is that because the project is for some public good, all four players receive an equal share of the increased sum, and in many instances that makes it individually rational to try to ride for free.[100] If, for instance, all four players are given an initial sum of $20 and all four contribute their entire sum to the group project, the $80 sum is increased to $120 and divided equally.[101] Each player has now gained $10. But if only three of the four contribute their entire sum to the group project and the fourth contributes nothing, then when

90. *See id.*
91. *Id.* at 216.
92. *See id.*
93. *See id.*
94. *See id.* at 216-17.
95. *See generally* Geoffrey E. Nunn & Thayer H. Watkins, *Public Goods Games*, 45 S. ECON. J. 598 (1978).
96. *E.g.*, *id.* at 598-99.
97. *E.g.*, Ernst Fehr & Simon Gächter, *Altruistic Punishment in Humans*, 415 NATURE 137, 137 (2002); *see also* HENRICH, *supra* note 1, at 217.
98. Fehr & Gächter, *supra* note 97, at 137.
99. *Id.*; *see also* HENRICH, *supra* note 1, at 217.
100. *See, e.g.*, Fehr & Gächter, *supra* note 97, at 137.
101. *See id.*

the $60 sum is increased to $90 and split four ways, the three who contributed their entire $20 receive only $22.50 in return. The free-riding fourth player, by contrast, is now sitting on the tidy sum of $42.50 (his initial $20 plus the public good payout).[102]

The most revealing finding is what happens when the game is altered to permit players to punish free riders over several rounds. When this version of the Public Goods Game is given to university students in countries with low-kin-based norms, most players are willing to punish free riders even at a cost to themselves.[103] When that happens, the frequency of free riding decreases and cooperation goes up.[104] The imposition of third-party sanctions on complete strangers produces a pronounced increase in group cooperation.[105] By contrast, when the same version is given to university students in Eastern European or Middle Eastern countries, the effects over several rounds are dramatically different.[106] Some players do indeed punish free riders, but free riders who are punished often try to retaliate in later rounds.[107] As Henrich puts it, free riders who have been punished by someone they do not know, perhaps someone who is not a member of their clan, apparently seek revenge against whomever punished them.[108] Notably, free riders cannot identify the specific players who paid to punish them—all contributions, including paid punishments, are anonymous—but that does not deter enraged free riders.[109] They instead lash out at any player who *might* have been the one to impose the initial punishment against them.[110] In some versions, this form of retaliatory punishment completely undermines the cooperation-enhancing effects of third-party sanctioning.[111]

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102. *See id.*

103. *See* HENRICH, *supra* note 1, at 217-18.

104. *See id.*

105. *See id.* at 217. For the general claim that costly punishment increases cooperation, see generally Fehr & Gächter, *supra* note 97.

106. *See* HENRICH, *supra* note 1, at 217-18.

107. *See id.*; *see also* Simon Gächter & Benedikt Herrmann, *Reciprocity, Culture and Human Cooperation: Previous Insights and a New Cross-Cultural Experiment*, 364 PHIL. TRANSACTIONS ROYAL SOC'Y B 791, 800 (2009).

108. HENRICH, *supra* note 1, at 217-18.

109. *Id.*

110. *Id.*

111. *Id.*

4. Summary of All Three Sets

Based on the above experiments (and others I have not mentioned), it is reasonable to conclude that a substantial diversity of norm psychologies across ethnolinguistic lineages exists in Homo sapiens today.[112] Cultural evolution is indeed a powerful producer of affective and cognitive diversity in our species, a diversity that includes the divergent norm psychologies just described. The generalization challenge, therefore, is real. In countries comprising ethnolinguistically diverse lineages, it is a challenge not only for lawmakers, but also for those creating effective policy in areas like immigration, education, and more.

II. THE STAYING POWER OF NORM PSYCHOLOGIES?

That there exists substantial diversity among cultural-historical norm psychologies is a fact with which we must reckon—or so it seems. Yet much depends on the depth and staying power of that diversity. The experiments just described, though compelling, do not reveal how entrenched the differences in norm psychologies are.[113] They do not tell us, for instance, whether and at what rate the norm psychology of individuals raised in an intensively kin-based society would change if they emigrated to a less kin-based society (or vice versa). If most of the diversity would disappear in a few years or a single generation, then the generalization challenge merits, at most, modest concern as we try to imagine the future of the law in light of the sciences of the human.

I assume, at any rate, that the generalization challenge is a substantive problem for the law only if there is a plausible answer to the question concerning the staying power of diverse norm psychologies. As we will see, the most plausible view at present is that there is no singular answer to this question, because much depends on the details specific to actual cases.[114] That said, there

112. *See supra* Part I.B.1-3.

113. *See supra* Part I.B.

114. *See generally* Daniel J. Hruschka & Joseph Henrich, *Economic and Evolutionary Hypotheses for Cross-Population Variation in Parochialism*, 7 FRONTIERS HUM. NEUROSCIENCE 1 (2013).

are compelling theoretical and empirical grounds for the general claim that in a nontrivial range of cases, ethnolinguistic differences in norm psychologies are likely to persist long enough to generate substantive, on-the-street challenges to extant systems of morality and of law.[115] The goal of the remainder of this essay is to describe some of these grounds.

The most potent grounds for the staying power of the diversity of norm psychologies derive from the theoretical core of theories of cultural evolution.[116] These are three core theses: (1) Homo sapiens today, far more than any other known species, is constituted, in part, by an evolved suite of capacities dedicated to *cultural learning*;[117] (2) this suite of cultural learning capacities coevolved with the *accumulation and perpetuation of cultural knowledge*;[118] and (3) understanding the coevolution of cultural learning and cumulative knowledge involves the application of three distinct evolutionary processes: (a) cultural learning and cumulative knowledge are plausibly anchored in ancestral capacities that are largely the products of *gene-based evolution*; (b) but some of those ancestral capacities have since been extended and altered to fit a specific cultural ecology by way of *culture-gene coevolution*; and (c) once our ancestral capacities for learning and our cumulative knowledge evolved above some threshold, the stage was set for *nongenetic cultural evolutionary changes* that can alter our biology without altering our genomes.[119]

Although all of (1)-(3) are integral to understanding cultural evolution, I will focus mainly on (3): the threefold taxonomy of

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115. *See infra* Part III.

116. There are several excellent book-length presentations of theories of cultural evolution published in the last decade or so. For a few that combine wide-scope coverage with theoretical depth, see generally HENRICH, *supra* note 1; BOYD, *supra* note 14; KEVIN N. LALAND, DARWIN'S UNFINISHED SYMPHONY: HOW CULTURE MADE THE HUMAN MIND (2017); HENRICH, *supra* note 18; KIM STERELNY, THE EVOLVED APPRENTICE: HOW EVOLUTION MADE HUMANS UNIQUE (Tom Roeper ed., 2012); ALEX MESOUDI, CULTURAL EVOLUTION: HOW DARWINIAN THEORY CAN EXPLAIN HUMAN CULTURE & SYNTHESIZE THE SOCIAL SCIENCES (2011).

117. *See* HENRICH, *supra* note 1, at 63.

118. *See id.* at 63-65.

119. *See generally* RICHARD DAWKINS, THE SELFISH GENE (40th Anniversary ed. 2016); Herbert Gintis, *Gene-Culture Coevolution and the Nature of Human Sociality*, 366 PHIL. TRANSACTIONS ROYAL SOC'Y B 878 (2011); EVA JABLONKA & MARION J. LAMB, EVOLUTION IN FOUR DIMENSIONS: GENETIC, EPIGENETIC, BEHAVIORAL, AND SYMBOLIC VARIATION IN THE HISTORY OF LIFE (rev. ed. 2014).

evolutionary processes that comprise cultural evolution as a whole. The importance of (1) and (2) will be noted as needed.

The coevolution of cultural learning and cumulative cultural knowledge is, as I say, a product of three evolutionary processes:

(a) Gene-based evolution
(b) Culture-gene coevolution
(c) Nongenetic cultural evolution[120]

I will illustrate each of these processes with actual examples to illuminate the depth of diversity among norm psychologies and evaluate the resulting effects on the staying power of those psychologies. I begin with the processes and products of gene-based evolution.

III. GENE-BASED EVOLUTION

The processes in gene-based evolution are familiar from basic evolutionary theory. Kettlewell's well-known study of the selective effects of melanism in the peppered moth is illustrative.[121] So, too, are the effects of psychological mechanisms more or less universal to Homo sapiens—mechanisms that presumably emerged prior to robust cultural selection—that are now *generatively entrenched* in our development,[122] and some which were foundational for the later emergence of culture-gene coevolution. These include mechanisms that were causally integral in sexual attraction, pair-bonding, parental care (in mammals), kin selection, reciprocal altruism, and more.[123]

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120. This threefold taxonomy of evolutionary processes is taken directly from Henrich. *See generally* HENRICH, *supra* note 18.

121. *See generally* BERNARD KETTLEWELL, THE EVOLUTION OF MELANISM: THE STUDY OF A RECURRING NECESSITY WITH SPECIAL REFERENCE TO INDUSTRIAL MELANISM IN LEPIDOPTERA (1973).

122. I take the notion of "generative entrenchment" from William Wimsatt. *See* WILLIAM C. WIMSATT, RE-ENGINEERING PHILOSOPHY FOR LIMITED BEINGS: PIECEWISE APPROXIMATIONS TO REALITY 133-34 (2007).

123. Jaak Panksepp, the father of affective neuroscience, identified several primary-process affective systems, largely in subcortical structures, that are functionally homologous across the many mammalian species studied thus far. Some of those systems—LUST, CARE, and PANIC/GRIEF—are among the evolved mechanisms central to pair-bonding, kin selection, and more. *See* JAAK PANKSEPP, AFFECTIVE NEUROSCIENCE: THE FOUNDATIONS OF HUMAN AND

These also include, however, psychological mechanisms that were causally integral to rudimentary forms of cultural learning.[124] These are psychological adaptations—mechanisms favored by gene-based selection—that endowed our ancestors with the cognitive and affective capacities to effectively acquire strategic information, beliefs, practices, and normative regularities from those with whom we live.[125] Before sampling a few of the mechanisms for cultural learning in our own species, however, it helps to observe analogous (perhaps homologous, in some instances) mechanisms in non-human, even nonmammalian, species. For, as Kevin Laland observes, *strategic copying* of behavior is ubiquitous in the biological realm.[126] It has been studied in the predator-evasion behaviors of monkeys, the feeding behavior of rats, nest-site choices in birds, mating behavior of quail and even stickleback fishes, and in many more contexts.[127] What is clear in all these cases is that the acquisition of strategic information and practices from conspecifics more often than not increases the fitness of those who copy.[128] It is also clear that such social "learning" requires little or nothing in the way of conscious awareness of the longer-term consequences of one's actions; it is a product of cognitive and affective capacities that are integral to the mental architecture of the relevant species and that typically operate below conscious awareness.[129]

The same two points apply to cultural learning in humans. The mechanisms with which present-day humans acquire strategic information and practices from conspecifics are clearly part of our species-wide architecture and typically operate with little or no conscious deliberation. This is clear from studies performed on persons of all ages, but it is perhaps clearest from cross-cultural studies performed on children as young as twelve months.[130] When one-year-olds are confronted with a novel, ambiguous object, they

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ANIMAL EMOTIONS 4 (1998). *See generally* JAAK PANKSEPP & LUCY BIVEN, THE ARCHAEOLOGY OF MIND: NEUROEVOLUTIONARY ORIGINS OF HUMAN EMOTIONS (2012).

124. *See* HENRICH, *supra* note 18, at 36.

125. *See id.* at 34-53 (providing an overview of the gene-based evolution of such mechanisms).

126. *See* LALAND, *supra* note 116, at 31, 55-57.

127. *Id.* at 32-33, 40-41, 47.

128. *Id.* at 76.

129. *See* HENRICH, *supra* note 18, at 40.

130. *Id.* at 41.

typically engage in social referencing by attending to the emotional expression of a caregiver or other adult for guidance.[131] If the mother smiles or offers encouragement, the infant will approach the unfamiliar object.[132] If the mother expresses fear, the infant moves away.[133] However, just two months later, the child's strategy for dealing with unfamiliar features of the environment is expanding.[134] By fourteen months, toddlers begin to attend preferentially to others whom they perceive to be relatively skillful or successful.[135] If, for instance, they observe one adult who acts confused while interacting with some object and a second adult who acts with confidence, the toddlers, when given the opportunity to interact with the same object, preferentially copy the actions of second adult over the first.[136] They attend to differences in skill and success, and they copy the behavior of the relatively skillful and successful.[137]

Moreover, by thirty-six months there is a discernible increase in the child's ability to retain and recall previous observations; three-year-olds retain and copy the relatively skillful actions that they observed several days earlier.[138] In addition to copying the actions of relatively competent adults, infants and toddlers also copy the actions of those perceived to be relatively prestigious,[139] those who are similar to themselves in sex[140] and ethnicity,[141] and those whom

131. *Id.*
132. *Id.* at 41-42.
133. *Id.*
134. *Id.* at 42.
135. *Id.*
136. *Id.*
137. *Id.*
138. *Id.*
139. *See* Maciej Chudek et al., *Prestige-Biased Cultural Learning: Bystander's Differential Attention to Potential Models Influences Children's Learning*, 33 EVOLUTION & HUM. BEHAV. 46, 48-49 (2012).
140. *See, e.g.*, Carol Lynn Martin & Jane K. Little, *The Relation of Gender Understanding to Children's Sex-Typed Preferences and Gender Stereotypes*, 61 CHILD DEV. 1427, 1436-38 (1990); Carol Lynn Martin et al., *Children's Gender-Based Reasoning About Toys*, 66 CHILD DEV. 1453, 1467 (1995); Elizabeth A. Reynolds Losin et al., *Own-Gender Imitation Activates the Brain's Reward Circuitry*, 7 SOC. COGNITIVE & AFFECTIVE NEUROSCIENCE 804, 809 (2012).
141. *See* David Buttelmann et al., *Selective Imitation of In-Group over Out-Group Members in 14-Month-Old Infants*, 84 CHILD DEV. 422, 426-27 (2013); *see also* Katherine D. Kinzler et al., *Children's Selective Trust in Native-Accented Speakers*, 14 DEVELOPMENTAL SCI. 106, 109-10 (2011).

they perceive to be older.[142] It bears emphasizing that the psychological dispositions displayed in these studies are *not* learned.[143] To the contrary, these experiments indicate that they are part of the architectural machinery with which infants and toddlers engage in highly strategic cultural learning.[144]

A more specific example of gene-based evolution concerns parochialism. As Hruschka and Henrich construe the term, parochialism is a person's psychological tendency to guide his actions in accordance with perceived cues of "social closeness."[145] The notion of social closeness is vague and challenging to operationalize. One way to fix the idea is by group membership. You and I are "socially close" if we belong to the same family, the same social organization, et cetera.[146] Another way is by subjective assessments based on spatial metaphors.[147] Whichever way we specify the empirically discernible effects of the concept, we may use it to measure differences in social closeness across social groups. We may do so by assessing a range of behaviors, including the extent to which individuals in one group avoid those from other groups (avoidance), the extent to which individuals in one group distribute resources that favor members of their group (favoritism), and the extent to which individuals rank family members and friends as better than other persons (ingroup bias).[148] The crucial finding for our purposes is twofold. First, these three measures of parochialism are highly positively correlated across many countries—countries high in one measure are high in all three.[149] Second, across those countries, all three measures are positively correlated with material

142. *See, e.g.*, Vikram K. Jaswal & Leslie A. Neely, *Adults Don't Always Know Best: Preschoolers Use Past Reliability over Age When Learning New Words*, 17 PSYCH. SCI. 757, 758 (2006).

143. *See, e.g.*, *id.*

144. *See id.*

145. Hruschka & Henrich, *supra* note 114, at 2.

146. *See id.*

147. *See id.*

148. *See id.*

149. *See id.*

insecurity and/or weak governmental institutions.[150] Parochialism trends upward as security trends downward.[151]

Now, data for the first claim—the positive correlation between avoidance, favoritism, and ingroup bias—derive from a study of 186 small-scale societies, which might limit the scope of the second claim—the correlation between parochialism and insecurity and/or weak institutions.[152] Those data, however, converge with evidence from several other sources, including studies on the effects of modernization, especially the effects of industrialization on material security.[153] These studies draw on multigenerational data from 191 countries, comprising nearly eighty societies worldwide, "including some of the richest and poorest nations in the world."[154] As Pippa Norris and Ronald Inglehart argue, religious or spiritual beliefs tend to persist in the face of industrialization even while affiliation in religious institutions declines.[155] Their key hypothesis is that material security is inversely related to the need for social affiliation in the larger community.[156] As security increases, affiliation in religious institutions decreases, and spiritual needs, which do not decline at the same rate as institutional affiliation, are increasingly addressed by way of solitary activities rather than by institutional ties.[157]

The suggestion here, then, is that the relationship between parochialism and material security described by Hruschka and Henrich, because it mirrors the parallel relationship between religiosity and material security described by Norris and Inglehart, may well reflect an entrenched feature of human psychology.[158] It may be the product of gene-based selection that occurred prior to widespread evolutionary changes wrought by culture-gene

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150. *See* Daniel J. Hruschka & Joseph Henrich, *Institutions, Parasites and the Persistence of In-Group Preferences*, 8 PLOS ONE, May 2013, at 1, 4.

151. *See id.*

152. *See* Hruschka & Henrich, *supra* note 114, at 3.

153. *See, e.g.*, PIPPA NORRIS & RONALD INGLEHART, SACRED AND SECULAR: RELIGION AND POLITICS WORLDWIDE 24-25 (2004).

154. *Id.* at 34.

155. *Id.* at 18.

156. *See id.*

157. *See* Ronald Inglehart & Wayne E. Baker, *Modernization, Cultural Change, and the Persistence of Traditional Values*, 65 AM. SOCIO. REV. 19, 47-49 (2000).

158. *See* Hruschka & Henrich, *supra* note 114, at 5.

selection.[159] If so, it illustrates the evolutionary processes in gene-based evolution with respect to a set of traits directly relevant to the generalization challenge. I will return to this illustration shortly.[160]

IV. CULTURE-GENE COEVOLUTION

The evolutionary processes in culture-gene coevolution are of particular importance in examining the depth of diversity among norm psychologies. These can occur in any population capable of producing cultural items, the effects of which alter the selective forces acting on that population, thereby increasing the probability of gene-based selection for new or altered capacities for navigating those new selective forces.[161] Henrich makes the point vividly:

> The central argument in this book is that relatively early in our species' evolutionary history, perhaps around the origins of our genus (*Homo*) about 2 million years ago ... cultural evolution became the *primary driver of our species' genetic evolution*. This interaction between cultural and genetic evolution generated a process that can be described as *autocatalytic*, meaning that it produces the fuel that propels it. Once cultural information began to accumulate and produce cultural adaptations, the main selection pressure on genes revolved around improving our psychological abilities to acquire, store, process, and organize the array of fitness-enhancing skills and practices that became

159. This hypothesis is also plausible given the evolutionary functions of the subcortical PANIC/GRIEF system discovered by Panksepp. *See* PANKSEPP & BIVEN, *supra* note 123, at 313-14.

160. Alternatively, the evolution of the inverse relationship between parochialism and security may be more a product of culture-gene coevolution than gene-based evolution (it could certainly be the outcome of both processes). *See infra* Parts IV-V. Some of the psychological mechanisms that implement parochialism—for example, those that bias us towards our kin—may have been the entrenched products of gene-based selection. Once cultural differences across neighboring groups began to emerge, and once competition between distinct cultural groups increased above some threshold, robust interactions between parochialism and cultural institutions within each group may well have resulted in culture-gene evolution. *See, e.g.*, BOYD, *supra* note 14, at 98-106. This hypothesis, which Henrich and other theorists dub "cultural group selection," *see supra* notes 14-15 and accompanying text, is thought to explain the occurrence of a wide range of culture-specific changes, including genetic changes, by appeal to the selective pressures imposed by intergroup competition.

161. *See* HENRICH, *supra* note 18, at 57.

> increasingly available in the minds of the others in one's group.[162]

Moreover, and crucially for the persistence of diverse norm psychologies, Henrich is explicit that culture-gene coevolution can and, in some cases, clearly has altered the genomes of ethnolinguistically distinct populations within our species.[163] The best documented cases include the evolution of blue eyes, an aversion to rice-based alcohol, and, the poster illustration of culture-gene coevolution, lactose tolerance in adults.[164] As Henrich notes, Kevin Laland and colleagues, well over a decade ago, identified over 100 genes affected by recent selective pressures that are plausibly cultural in nature.[165] There are also cases, noted by Henrich, in which social structures clearly affect the human genome.[166] Studies by Hiroki Oota and colleagues reveal compelling evidence that patrilocal residence produces a relatively low degree of variation in Y chromosomes, while matrilocal residence produces relatively less variation in mitochondrial DNA.[167]

The crucial claim, then, is that the same culture-gene coevolutionary processes that selected for physiological changes such as alcohol aversion or lactose tolerance would have simultaneously selected for associated practices and social norms. This is an important point. Changes in physiology that bear on health, vigor for reproduction, and longevity do not operate in a norm-free manner.[168] They unavoidably engender changes in shared expectations concerning the production and proper use of the relevant cultural items.[169] It is thus highly probable that culture-gene selection for changes in physiology would typically be accompanied

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162. *Id.* What Henrich refers to as an "autocatalytic" process is, I believe, the same process that Tennie, and others, refer to as "ratcheting up the ratchet." *See id.*; Claudio Tennie et al., *Ratcheting up the Ratchet: On the Evolution of Cumulative Culture*, 364 PHIL. TRANSACTIONS ROYAL SOC'Y B 2405, 2405-06, 2412-13 (2009).

163. HENRICH, *supra* note 18, at 200.

164. *Id.* at 85, 88-90.

165. *Id.* at 92; Kevin N. Laland et al., *How Culture Shaped the Human Genome: Bringing Genetics and the Human Sciences Together*, 11 NATURE REVS. GENETICS 137, 137 (2010).

166. *See* HENRICH, *supra* note 18, at 92.

167. Hiroki Oota et al., *Human mtDNA and Y-Chromosome Variation Is Correlated with Matrilocal Versus Patrilocal Residence*, 29 NATURE GENETICS 20, 20-21 (2001).

168. *See* HENRICH, *supra* note 18, at 108, 168, 187, 318.

169. *See id.*

by culture-gene selection for changes in culture-specific social norms:

> Here's the idea: cultural evolution gave rise to a variety of different social norms, so different groups became increasingly characterized by different practices and expectations about such things as marriage, exchange, sharing, and rituals. Then, natural selection acting on genes responded to this world governed by social norms by endowing individuals with the cognitive abilities and motivations to help them better navigate and adaptively learn. The success of persons growing up in this emerging landscape of social norms depended—at least in part—on their ability to acquire the appropriate social norms for their own group and to preferentially target their interactions toward those most likely to share their norms.[170]

If this is correct—if culture-gene coevolution has produced gene-anchored capacities across our species for acquiring norms that are culture-specific and for responding preferentially to others who share the same cultural norms—then the diversity of norm psychologies that gives rise to the generalization challenge has staying power with considerable depth.

The range of traits in present-day humans plausibly produced by culture-gene evolution spans, at minimum, the broad categories of "marriage, exchange, sharing, and rituals."[171] My goal here is to describe just three well-studied cases of culture-gene coevolution. The second and third cases, in particular, illustrate the apparent staying power of diverse norm psychologies.

A. Agricultural and Biological Coevolution

The first case, however, is the relatively simple poster illustration of culture-gene coevolution mentioned above: the coevolution of agriculture and lactose tolerance in some human adults. Archeological evidence suggests that in some (not all) ancestral populations there was selection for a genetic mutation that produces the relevant enzyme in ancestors who, around 10,000 years ago, began

170. *Id.* at 200.
171. *Id.*

domesticating animals.[172] The transition from nomadic to agrarian life, it appears, spread slowly over a period of several thousand years.[173] Because figuring out how to grow, store, and protect crops no doubt required extensive trial and error, it is plausible that the capacity to digest the protein- and fat-rich milk of other animals sustained ancestral adults who otherwise would have died out in seasons of low agricultural yields.[174] If so, there would have been intense selection for any genetic mutation that enabled adults to digest milk without the deleterious effects of lactose intolerance.[175]

Now, we know that culture-gene evolution requires the relative stability of cultural selective pressures over several generations.[176] In general, culture-gene evolution occurs when (1) stable selective pressures imposed by cultural items tend to favor genetic mutations for capacities that enable organisms to make better use of evolving cultural items; (2) changes in organismic capacities tend, in turn, to result in the production of new cultural items and improvements to current ones; (3) a new round of cultural items or improvements once again alters the selective pressures, which tend to select for mutations for improved capacities with which to utilize those cultural items; and so on.[177] This is the process, as Claudio Tennie describes it, of ratcheting up the ratchet.[178]

B. Marriage: Pair-Bonding and Culture Coevolution

Now consider one of the broad categories mentioned by Henrich: the cultural evolution of various forms of marriage.[179] A cultural institution that presumably taps into our gene-based disposition for *pair-bonding*,[180] marriage is striking both for the unity of its

172. Pascale Gerbault et al., *Evolution of Lactase Persistence: An Example of Human Niche Construction*, 366 PHIL. TRANSACTIONS ROYAL SOC'Y B 863, 864-67, 872-73 (2011).

173. *See id.* at 866-67.

174. *See id.* at 865-66.

175. *See id.* at 866.

176. *Id.* at 863-64.

177. Tennie et al., *supra* note 162, at 2405-06, 2413.

178. *See generally id.*

179. *See* HENRICH, *supra* note 18, at 145-46.

180. *See* BERNARD CHAPAIS, PRIMEVAL KINSHIP: HOW PAIR-BONDING GAVE BIRTH TO HUMAN SOCIETY 158, 162 (2008). For another marvelous work on marriage, see Joseph Henrich et al., *The Puzzle of Monogamous Marriage*, 367 PHIL. TRANSACTIONS ROYAL SOC'Y B 657, 659 (2012).

evolutionary function—enhancing the production of viable offspring—and for the diversity of practices and associated norms across distinct cultures.[181] The ways in which marriage enhances viable offspring are difficult to miss. It transforms what might otherwise be short-term pair bonds, few of which have been monogamous throughout most of human history, into long-term bonds, many of which become more or less monogamous.[182] The reasons are clear. In cultures where monogamous marriage is prevalent, there is greater paternal certainty that one's children are one's genetic offspring, and this likely increases male investment.[183] In addition, marriage produces in-laws by joining together families that may not be closely related by blood.[184] These and other factors expand the base of material and social support for the children of married couples, making it easier to raise not only more children but also children who will likely grow into competent, reproductively successful adults.[185] The evolutionary payoff of marriage is unsurprising.

What is surprising about marriage is the cultural diversity of norms with which it is practiced. One such set of norms is less about the "practice" of marriage than its suppression. As Henrich describes, families in the Na and other ethnic groups in China are, in a substantive sense of the term, *fatherless*.[186] There are "biological" fathers, providers of sperm, but these genetic fathers provide no material support for the offspring they produce.[187] Na households are female-run and families are matrilineal.[188] Since pregnancy is mainly a consequence of secretive, short visits by men, paternity is not an issue.[189] Indeed, genetic fathers may not know they are biological fathers and may have no idea which children are their

181. *See* Henrich et al., *supra* note 180, at 657-60, 665-66.

182. *See* HENRICH, *supra* note 18, at 146-47.

183. *See id.* at 146; Bryan D. Neff, *Decisions About Parental Care in Response to Perceived Paternity*, 422 NATURE 716, 718 (2003).

184. HENRICH, *supra* note 18, at 147; *see also* Mark Dyble et al., *Inclusive Fitness for In-Laws*, BIOLOGY LETTERS, Oct. 17, 2018, at 1, 1.

185. *See* HENRICH, *supra* note 18, at 147.

186. *Id.* at 150.

187. *Id.*

188. *Id.*

189. *Id.*

biological progeny.[190] Although genetic fathers provide no material support to their own offspring, men are expected to support children born to their sisters.[191] Such fatherlessness is even apparent linguistically: there are no words in the local language for "husband," "father," or "in-law."[192] Yet, despite the cultural institutions and norms that suppress pair-bonding in these groups and result in fatherless families, those norms and institutions have proven remarkably stable.[193]

Contrast the fatherless Na with the Barí in Venezuela and the Aché in Paraguay, where many children have *multiple fathers*.[194] Among the Barí, for instance, it is apparently believed that a successful pregnancy requires multiple ejaculations of sperm.[195] Women are thus encouraged to have sex with more men than just their husbands.[196] When, at birth, the mother names the additional men with whom she had intercourse, those men become secondary fathers and are expected to provide material support for the baby.[197] Studies of the Barí and the Aché show that children with two "fathers" are more likely to survive past age fifteen than children with just one father.[198]

As Henrich notes, however, Barí and Aché husbands are not indifferent to their wives having sex with other men. They experience sexual jealousy.[199] This, I believe, is significant to the question concerning the persistence of diversity among norm psychologies. We are supposing that pair-bonding is a gene-based capacity that

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190. *See* CAI HUA, A SOCIETY WITHOUT FATHERS OR HUSBANDS: THE NA OF CHINA 227-28 (Asti Hustvedt trans., 2001).

191. HENRICH, *supra* note 18, at 150.

192. *Id.*

193. *Id.* This is, on its face, a remarkable example of cultural evolution suppressing, or at least altering substantially, the expression of a powerful species-wide, genetically based trait.

194. *Id.* at 149-51; Stephen Beckerman et al., *The Barí Partible Paternity Project, Phase One*, *in* CULTURES OF MULTIPLE FATHERS: THE THEORY AND PRACTICE OF PARTIBLE PATERNITY IN LOWLAND SOUTH AMERICA 27, 32 (Stephen Beckerman & Paul Valentine eds., 2002).

195. HENRICH, *supra* note 18, at 151.

196. *Id.*

197. *See* Beckerman et al., *supra* note 194, at 32-33.

198. HENRICH, *supra* note 18, at 151. The same studies show that children with three or more "fathers" do worse than those with exactly two. *Id.* This is puzzling. Henrich offers a plausible explanation: responsibility increasingly diffuses as the number of secondary fathers increases. *Id.* at 352 n.18.

199. *Id.* at 151.

evolved prior to the rise of substantial cultural evolution. We may now add that sexual jealousy probably belongs in the same category. Sexual jealousy, we may assume, coevolved in tandem with pair-bonding, and today these two ancient mechanisms may reinforce one another. A substantial practice of monogamy may well keep sexual jealousy more or less at bay, while the threat of jealous outbursts may stabilize the practice of monogamy.[200] If so, then, for any hypothesis concerning the cultural evolution of marriage, we must consider the potential causal interactions of these generatively entrenched traits: pair-bonding and sexual jealousy.

Here, then, is why this is significant. Norm psychologies will be less (or more) resistant to change than others, depending on how effectively the culturally evolved institutions coordinate the entrenched genetically based mechanisms from which they, the cultural institutions, have evolved.[201] The question concerning diverse norm psychologies with respect to marriage is this: How effectively do these diverse cultural institutions of marriage—those, for instance, in Barí versus those in the United States—*coordinate* the predictable causal effects of pair-bonding and sexual jealousy?

Here is what seems to be a reasonable, albeit speculative, answer.[202] The culturally evolved institution of marriage among the Barí is plausibly less stable and more tenuous than the institution that evolved among present-day Westerners due to the asymmetrical burden imposed on Barí husbands.[203] As noted, husbands in the Barí culture experience sexual jealousy;[204] apparently, the culture-gene coevolutionary pressures that gave rise to Barí marriage norms did not select against mechanisms of male sexual jealousy. The result is that those men, presumably by virtue of some set of

200. All this is in addition to the norm-based practices that function as third-party monitors of violators and as potential sources of sanctions. Consider, for instance, the power of gossip to diminish or burnish a person's reputation. *See* HENRICH, *supra* note 18, at 146.

201. *See generally id.*

202. Although reasonable, the following illustration is oversimplified along several dimensions. For instance, the burdens imposed on husbands need to be balanced against burdens imposed upon wives, grandparents, in-laws, and so on. All of these burdens, moreover, need to be compared with and balanced against the real or perceived benefits that accrue to other parts of Barí culture.

203. *See supra* notes 194-200 and accompanying text.

204. *See supra* notes 199-200 and accompanying text.

beliefs and norms, are pressured or otherwise incentivized to ignore, tamp down, or channel feelings of sexual jealousy.[205] By contrast, in present-day Western countries, there is no widespread normative expectation that husbands tolerate their wives being intimate with other men.[206] In countries like the United States, marriage comes with the normative expectation, even if not the widespread or consistent practice, of monogamy.[207] The *normative burden* on Western husbands with regard to sexual jealousy is, at least on its face, less than it is on Barí husbands.[208]

Let us suppose, if only for the sake of argument, that this asymmetry in the burdens imposed on husbands in both cultures is real. In that case, the effect of this asymmetry on the resistance to change among norm psychologies is likely substantial. If a heterosexual married couple from the United States were to become Barí citizens, the husband (and perhaps the wife) would likely find the difference in normative expectations psychologically insurmountable. After all, present-day Western men belong to a lineage in which entrenched mechanisms for pair-bonding and for sexual jealousy have worked more or less in tandem for centuries.[209] Were a Western husband to try to assimilate to life with the Barí, he would likely be slow to lose the normative expectations concerning monogamy and much slower to internalize the marriage norms of the Barí. By contrast, if a heterosexual couple from the Barí were to become citizens of the United States, the husband (and perhaps the wife) would likely find the normative expectations less daunting. The transition from having to manage or bypass feelings of sexual jealousy to not having to manage such feelings (or, at most, having to manage them on a smaller scale) would plausibly result in a substantial reduction of psychological stress for the husband.

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205. *See* Beckerman et al., *supra* note 194, at 32.

206. Léa J. Séguin, *The Good, The Bad, and The Ugly: Lay Attitudes and Perceptions of Polyamory*, 22 SEXUALITIES 669-70, 683-86 (2019).

207. *See* Kelly Campbell & David W. Wright, *Marriage Today: Exploring the Incongruence Between Americans' Beliefs and Practices*, 41 J. COMPAR. FAM. STUD. 329, 334-37 (2010).

208. I wish to emphasize I am not committed to the truth of this narrative. Nor am I suggesting that one norm psychology is preferable to the other. I am committed to the hypothetical claim that, *if* this narrative is correct, then the norm psychology of the Barí probably has less staying power than other norm psychologies in which sexual jealousy is triggered less frequently.

209. *See* Séguin, *supra* note 206, at 670, 672.

If this supposition is on track, we may draw two substantive conclusions. First, the staying power of any norm psychology is a causal consequence, in part, of how effectively the evolved cultural institutions (for example, norms of marriage) coordinate the effects of generatively entrenched mechanisms (for example, pair-bonding and sexual jealousy) from which those cultural institutions evolved. Second, the truth of this first conclusion illustrates one way in which at least some parts of our norm psychologies have substantial staying power. Some are more resistant to change insofar as they better coordinate the outputs of our generatively entrenched mechanisms.

C. The Cultural Coevolution of Impersonal Trust

The third case of culture-gene coevolution is intended to reinforce and extend the lesson just drawn from the case of diverse marriage norms. Let us circle back to the first set of experiments in Part I concerning moral motivation.[210] The upshot of those experiments is that internalized moral motivations tend to diverge as cultures differ in the degree of kin-focused institutions. Members of intensely kin-based cultures are far more *partial* in their moral motivations than members of cultures with weaker kin-related institutions.[211] As Henrich argues, present-day countries that are "WEIRD"[212]—that are Western and relatively Educated, Industrialized, Rich, and Democratic—are comparatively obsessed with *impartial* moral motives compared to less WEIRD countries.[213] What I wish to highlight, as in my discussion of marriage norms, are the ways in which the staying power of a norm psychology depends on how well the relevant norms coordinate the causal effects of our generatively entrenched mechanisms.

One relevant generatively entrenched mechanism concerns *interpersonal* trust, a mechanism probably selected for in distant ancestors in the context of kin selection. Recall the experimental

210. *See supra* Part I.B.1.

211. *See* HENRICH, *supra* note 1, at 305-07.

212. *See* Henrich et al., *supra* note 29, at 29.

213. *See generally* HENRICH, *supra* note 1; Joseph Henrich et al., *The Weirdest People in the World?,* 33 BEHAV. & BRAIN SCIS. 61 (2010) (providing an earlier statement of the general view).

finding, described in Part I, that leaders of companies in kin-based countries hire far more relatives into positions of senior management than company leaders in WEIRD countries.[214] Norms that permit or perhaps require that sort of practice plausibly rest upon a high degree of trust between kin.

There is, however, a mechanism for an opposing form of trust, a trust that can develop between strangers. Henrich describes this form of trust as *impersonal* and speculates that it probably first emerged in impersonal market exchanges.[215] Commercial exchange in markets where most participants are strangers to one another is a social situation in which all players, to reap the anticipated benefits of commerce, are incentivized to internalize a common set of expectations and prescriptions.[216] Such norms would plausibly emerge as a substitute to kin-focused norms in the regulation of behavior. As these impartial norms take hold, psychological mechanisms for impersonal trust are likely selected for, and eventually impersonal trust begins to generalize to other types of potentially fruitful interactions with strangers.[217] It is thus no accident, according to Henrich, that as commercial exchange in Europe emerged, a broad range of institutions in which strangers interact with one another for a range of common purposes also began to emerge—including guilds, churches, monasteries, universities, and more.[218]

Here, then, is the point about the staying power of diverse norm psychologies. If a mechanism for impersonal trust is now part of the psychological repertoire of WEIRD persons today, it plausibly requires the tamping down of our generatively entrenched mechanisms for interpersonal trust—mechanisms that presumably arose in the course of kin selection millions of years ago. It probably also requires the emotional wherewithal to venture away from kin relations based on interpersonal trust and to simultaneously quell what would have been a deep-seated fear of strangers. It thus

214. *See supra* note 40 and accompanying text.

215. HENRICH, *supra* note 1, at 48.

216. *See id.* at 290-94; *see also* Christian Thöni, *Trust and Cooperation: Survey Evidence and Behavioral Experiments*, *in* TRUST IN SOCIAL DILEMMAS 155, 156-58 (Paul A.M. Van Lange et al. eds., 2017).

217. *See supra* note 122 and accompanying text.

218. HENRICH, *supra* note 1, at 322-29.

seems reasonable to speculate that the norm psychology associated with impersonal trust has less staying power than the psychology associated with interpersonal trust.

That, however, may be overly hasty. If Henrich's historical hypothesis is correct—if norms of impersonal trust emerged as market norms took hold[219]—then norms of impersonal trust that operate mainly in WEIRD countries may also have staying power. The deep-seated fears of interacting with strangers that our ancestors experienced may have been mitigated in some lineages by the enhanced prospects of survival and the range of satisfactions that a market economy can produce. Since mechanisms that bear on survival and pleasure are likely among the most generatively entrenched parts of our psychology, the staying power of newer norms for impersonal trust may be comparable to, or perhaps greater than, those for the presumably much older mechanisms of interpersonal trust.[220]

I take it that, at present, we do not know which form of trust, if either, has greater staying power in extant norm psychologies. We nonetheless may draw two substantive conclusions. First, if one form of trust, as a matter of empirical fact, has greater staying power than the other, then there exists another asymmetry in the staying power of the corresponding norm psychologies, an asymmetry parallel to the one concerning marriage norms.[221] This seems, in fact, a genuine possibility. After all, the much older mechanisms for interpersonal trust still exist even in robustly WEIRD countries today.[222] They still exert considerable influence within our norm psychologies. How could it be otherwise if those mechanisms run deep in ancient mechanisms favored by kin selection?

It is no surprise, for instance, that the moral intuitions of many Westerners, despite avowed commitments to impartial norms, do not contest the moral permissiveness of preferring the well-being of their own children, even in instances where we know that opportunities afforded our children are opportunities denied to other

219. *See id.* at 302-04.
220. *See id.*
221. *See supra* Part IV.B.
222. *See* HENRICH, *supra* note 1, at 258-59, 262-63.

children.[223] If an asymmetry along these lines is empirically defensible, then we can conclude yet again that the staying power of norm psychologies is a function, in part, of the success with which culturally evolved mechanisms coordinate the effects of generatively entrenched mechanisms.

To see the second conclusion, suppose the staying power of both forms of trust is equal across a range of environments. Suppose impersonal trust coordinates the effects of certain entrenched psychological mechanisms as effectively as interpersonal trust coordinates the effects of ancient mechanisms produced by kin selection. If that were the case, we would be faced with an interestingly different version of the generalization challenge—a challenge due not to diversity between distinct ethnolinguistic lineages, but to norm diversity within a *single lineage*. The challenge is that there would exist lineages comprising individuals whose psychology contains mechanisms for *opposing* forms of trust. That, I take it, describes the norm psychology of present-day persons who are truly WEIRD. For we, like all members of our species, are plausibly endowed with entrenched mechanisms for interpersonal trust, but we are also endowed, unlike non-WEIRD persons, with mechanisms for impersonal trust.[224] The problematic diversity is a conflict built into the very architecture of WEIRD norm psychologies.[225]

In general terms, WEIRD persons today are normatively fragmented or disunified. In a range of cases, our kin-related trust, along with our deeply partial attachments and expectations, comes into conflict with our disposition to trust strangers—a trust that includes internalized expectations of impartial treatment.[226] One concrete illustration of our normative fragmentation is friendship.[227] As Alexander Nehamas describes, the ineliminable partiality of friendship cannot be reconciled with an unrelentingly impartial moral perspective.[228] He illustrates the inherent conflict this way:

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223. *See* Hohjin Im & Chuansheng Chen, *Cultural Dimensions as Correlates of Favoritism and the Mediating Role of Trust*, 27 CROSS CULTURAL & STRATEGIC MGMT. 417, 423-28 (2020).

224. HENRICH, *supra* note 1, at 299-300.

225. *Id.*

226. *See id.* at 22.

227. For a cultural evolutionary approach to friendship, see DANIEL J. HRUSCHKA, FRIENDSHIP: DEVELOPMENT, ECOLOGY, AND EVOLUTION OF A RELATIONSHIP 2-3 (2010).

228. ALEXANDER NEHAMAS, ON FRIENDSHIP 187-88 (2016).

> "If I had to choose between betraying my country and betraying my friend, I hope I should have the guts to betray my country," E.M. Forster once wrote, recalling that Dante cast Brutus and Cassius in the lowest circle of Hell because in assassinating Caesar, they had forsaken not their country but their friend.[229]

In killing Caesar, Brutus and Cassius betrayed two forms of trust: the impartial trust embodied in laws against murder and the partial trust between friends. Nehamas, along with Forster, assigns greater merit to love between friends and thus the partial form of trust.[230] Yet both of those authors, presumably like most readers of this Article, no doubt qualify as WEIRD.[231]

The generalization challenge in this case is twofold. First, how do we design a coherent set of laws that applies to even a single lineage that is WEIRD and thus normatively disunified? The challenge arises whenever our mechanisms for both forms of trust come to cross purposes, as with Nehamas's example above. Second, when members of non-WEIRD lineages live in the same country with members of WEIRD ones, is a coherent set of laws possible? The answer to both questions, I suspect, is sobering.

Before drawing my main conclusion regarding culture-gene evolution, I want to reflect on a historical case of change in a norm psychology that may appear at odds with the line of reasoning I have been defending. Let us return to the study of parochialism by Hruschka and Henrich.[232] They describe a remarkable case of cultural evolutionary change that includes apparent changes in the prevailing norm psychology.[233] They describe how, over the past two hundred years, the Iban, a population of about half a million, lost the practice of head-hunting for spiritual rituals.[234] Before being colonized, the Iban comprised a kin-based, agrarian society in which head-hunting was practiced when specific spiritual demands warranted it.[235] When a head was taken, it was always the head of

229. *Id.*
230. *See id.*
231. *See* HENRICH, *supra* note 1, at 21.
232. *See generally* Hruschka & Henrich, *supra* note 114.
233. *Id.* at 1.
234. *Id.*
235. *Id.*

someone from an outgroup—within-group killings were not tolerated—and it was a significant part of a religious ritual.[236] As the Iban were forced to relinquish their spiritual rituals, they were also forced to change religions, adhere to Western educational practices, take jobs outside their ancestral agrarian circle, and more.[237] All of this, as Hruschka and Henrich observe, constituted a remarkable cultural transformation—an apparent example of deep cultural evolution among moral, legal, and religious norms.

For anyone tempted to think this case undermines the generalization challenge, however, two cautionary points are in order. First, it is not obvious that the apparent changes in the Iban's normative psychological mechanisms were changes of real depth. Altering overt spiritual practices is often preferable to imprisonment or death, especially if a person can covertly achieve inherited spiritual ends by other means. The question is whether and how quickly present-day Ibanians would revert to ancestral practices such as head-hunting if the colonizing institutions abruptly disappeared.

Second, even if the apparent changes in norm psychology are real—even if the adoption of Christian or Islamic norms have taken psychological root and replaced ancestral Ibanian theology—it bears emphasis that the evolutionary process sketched by Hruschka and Henrich took place over two centuries and was largely a product of unilateral violent force.[238] Both points are important. A strife-ridden period of two hundred years is ample time for on-the-street clashes fueled by legal norms that fail to fit the psychology of the population. The generalization challenge, that is, *might* have arisen insofar as the Iban and their colonizers lived together for several generations. In fact, it is unlikely that the generalization challenge emerged in this case. The reason is simple. The challenge arises in diverse populations only when genuine ethnolinguistic diversity actually exists. The use of violent force to annihilate such diversity removes the very conditions in which the challenge can emerge.

236. *Id.*
237. *Id.*
238. *Id.*

V. NONGENETIC CULTURAL EVOLUTION

Nongenetic evolutionary processes also support the generalization challenge, at least in the short term, across the lifetime of individuals. Those processes may also apply across generations, if relevant genetic mutations happen to occur, or if, more likely, the children of emigrants inherit and perpetuate the cultural norms of their parents.

A vivid example of the evolutionary processes in nongenetic evolution is reading. As far as we know, no genetic mutation explains the difference between modern humans who read and those who do not.[239] What explains the difference are ontogenetic neurological changes caused by exposure to cultural products and practices.[240] Learning to read produces extensive rewiring of parts of the brain,[241] as does learning to play a musical instrument,[242] and more. Of course, the downstream effects of reading or playing piano are immense, and those effects may indeed result in genetic mutations being selected for some further capacity.[243] The assumption, however, is that instances of nongenetic evolution, when they occur, *can* and frequently *do* produce substantial biological changes without genetic changes.[244] Parts of our biology are altered via cultural selection before genetic mutations can occur and be selected for.

The same point applies to learning social norms. Like learning to play piano, learning the norms of one's social group involves not merely the acquisition of relevant beliefs, but also the internalizing of certain skills, affective expectations and responses, conscious and nonconscious motivations, and more.[245] One comes to believe, at least in some cultures, that punishing another person requires that the targeted individual is blameworthy and that persons are

239. HENRICH, *supra* note 1, at 5.

240. *Id.* at 84.

241. *See generally* STANISLAS DEHAENE, READING IN THE BRAIN: THE SCIENCE AND EVOLUTION OF A HUMAN INVENTION (2009); Stanislas Dehaene, Reading in the Brain *Revised and Extended: Response to Comments*, 29 MIND & LANGUAGE 320, 324 (2014).

242. *See generally* R. Douglas Fields, *The Brain Learns in Unexpected Ways*, 322 SCI. AM. 74, 75 (2020).

243. HENRICH, *supra* note 1, at 5-7.

244. *Id.* at 5.

245. *Id.* at 16-17.

blameworthy if they knowingly and voluntarily harm other persons (and perhaps other sentient beings).[246] In addition, one develops skills with which to correctly apply such propositional knowledge. One acquires skills with which to discern whether a specific individual acted voluntarily and knowingly.[247] One also acquires the appropriate affective response towards individuals who knowingly and voluntarily harm another person.[248] At the very least, persons who successfully internalize a negative affective reaction towards apparent norm-violators are probably better at identifying and effectively sanctioning norm violators.

On the assumption that learning social norms, like learning to read and play piano, involves the rewiring of parts of our brains, let us consider two ways the evolutionary processes in nongenetic evolution bear on the generalization challenge.

Some Neural Wiring Is Difficult to Reverse: The claim that learning social norms involves neural rewiring is, I believe, plausible in light of the model of neural mechanisms of blame and punishment proposed by Joshua Buckholtz and colleagues.[249] The success of any human lineage, it is assumed, rests in part on large-scale social cooperation, which in turn rests upon the formation and transmission of social norms along with the psychological mechanisms with which to discern, internalize, and act on those norms.[250] As Buckholtz and colleagues put it, cooperation requires, among other skills, capacities with which to detect and sanction norm violators.[251] The exercise of these capacities, moreover, "is not a single, unitary cognitive process, but rather comprises a range of distinct subcomponent processes."[252] They continue:

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246. This, of course, is a view of punishment that depends directly on assessments of intentions. As the experiments described in Part I.B appear to show, some cultures appear to sanction norm-violators without assessing their intentions.

247. *See* Joshua W. Buckholtz & René Marois, *The Roots of Modern Justice: Cognitive and Neural Foundations of Social Norms and Their Enforcement*, 15 NATURE NEUROSCIENCE 655, 658 (2012).

248. *Id.*

249. *See id.* at 655-60; *see also* Joshua W. Buckholtz et al., *From Blame to Punishment: Disrupting Prefrontal Cortex Activity Reveals Norm Enforcement Mechanisms*, 87 NEURON 1369, 1376-77 (2015).

250. Buckholtz et al., *supra* note 249, at 1369.

251. *Id.*

252. *Id.* at 1370.

> These [subcomponent processes] include evaluating an agent's action with respect to shared codes for acceptable conduct (moral permissibility); assessing the agent's role in causing that act (causal responsibility); determining the agent's mental state during the act—especially his intentions (moral responsibility or "blameworthiness"); appraising the outcome of the act, particularly whether and how much it harmed other people (harm assessment); and, finally, arriving at an appropriate sanction for the act (punishment).[253]

The core of their model concerns the roles played by the dorsolateral prefrontal cortex (DLPFC) in deciding to punish norm-violators.[254] The DLPFC's central function, they suggest, is to integrate information concerning the violator's blameworthiness, which is keyed to the intention on which the individual acted, and the severity of harm caused.[255] This integrated information then serves as the basis for deciding whether to punish the violator.[256]

For my purposes, the salient feature of this model is that persons must learn to be competent judges of whether and how much punishment is warranted by any norm violation. These, I take it, are straightforward instances of learning how to conduct oneself in accordance with social norms. One must learn the norms of his culture, of course, but one must also learn the range of conditions in which an action qualifies as being a token of the right causal type. One might need to learn, for instance, to discriminate between actions in which harms are knowingly and intentionally caused from actions in which harms are caused unknowingly, or caused knowingly but unintentionally, and so on. These sorts of judgments require more than our species-wide mentalizing capacities.[257] They

253. *Id.*
254. *Id.*
255. *Id.*
256. *Id.*
257. On the evolution of mentalizing, see generally SARAH BLAFFER HRDY, MOTHERS AND OTHERS: THE EVOLUTIONARY ORIGINS OF MUTUAL UNDERSTANDING (2009) (arguing humankind's complicated and contingent form of childrearing developed human capacity for understanding others). For recent work on the neural mechanisms involved, see generally Melissa D. Thye et al., *Differential Recruitment of Theory of Mind Brain Network Across Three Tasks: An Independent Component Analysis*, 347 BEHAV. BRAIN RSCH. 385 (2018) (elucidating neural mechanisms associated with mental state detection and causal attribution).

require, in addition, the acquisition of perceptual, memory, and inferential capacities specific to one's cultural context.[258]

This, then, is one nongenetic cultural evolutionary process that alters neural mechanisms in ways similar to the rewiring that occurs when we learn to read or play piano.[259] That this general sort of social learning is culture-specific is what matters most to the generalization challenge. To see this, recall once again the second set of experiments in Part I concerning the role of intentions in moral judgments.[260] Persons raised in intensely kin-based groups are less inclined to discriminate morally between harms caused intentionally and harms caused accidentally.[261] By contrast, persons raised in WEIRD groups tend to distinguish morally between intentional and unintentional harms.[262] Now, this diversity in norm psychologies should raise doubts about the cross-cultural applicability of the theory proposed by Buckholtz and colleagues.[263] For present purposes, however, the important point is that the general machinery of their model can be retained even if we jettison the apparent assumption that punishment depends across cultures on assessing intentions.

Part of the relevant machinery is the assumption that norm-related learning is, or at least can be, culture-specific. The culture-specificity of norm acquisition makes it reasonable to maintain that the neural wiring acquired during such learning is itself diverse. The first point, then, regarding the generalization challenge is straightforward. In many instances, the neural rewiring caused by learning to read or to play piano is not readily reversible.[264] Of course, much depends on the age at which one learns, as well as the

258. Indeed, as Henrich argues, "we humans do, of course, construct causal models of how the world works. However, what's often missed is that the construction of these models has long been sparked and fostered by the existence of complex culturally evolved products.... [F]or much of human history until recently, cumulative cultural evolution drove the emergence of deeper causal understandings much more than causal understanding drove cultural evolution." HENRICH, *supra* note 18, at 112-13.

259. *See generally* Fields, *supra* note 242.

260. *See supra* Part I.B.2.

261. *See supra* Part I.B.2.

262. *See supra* Part I.B.2.

263. *See* Buckholtz & Marois, *supra* note 247, at 655, 660; *see also* Buckholtz et al., *supra* note 249, at 1369, 1374-77.

264. *See* S. Trojan & J. Pokorný, *Theoretical Aspects of Neuroplasticity*, 48 PHYSIOLOGICAL RSCH. 87, 91 (1999).

level of mastery achieved, and no doubt both skill sets, if not utilized, will decay over time.[265] It seems safe to assume, however, that by the age of fifteen years, most persons who have learned to read in their native language are unlikely to lose those skills altogether, even if they emigrate to a country where they have little opportunity to use their native language.[266] The neural bases of their native language will likely remain robust even if they are limited to reading and speaking only in their own homes.[267] In some cases, moreover, children of emigrant parents will learn to speak and read some of their parents' native language.[268] There is, therefore, a discernible degree of staying power in the neural changes wrought by learning to read and to speak a culture-specific language. Presumably the same is true of other complex skills such as playing piano, driving a car, judging whether a singer is on pitch, and more.

Second, and crucially, the same is presumably also true of the neural wiring involved in learning social norms. The wiring changes that occur as we acquire the necessary perceptual, memory, inferential, and affective skills are prone to persist for much of an individual's lifespan, and they might be acquired by subsequent generations, at least in some cases.[269] It thus is reasonable to conclude that cultural differences in norm psychologies are likely to persist for decades and, in some instances, for generations, even among persons who emigrate to a very different culture.

When Social Learning Matters Most: A core discovery by cultural evolutionary theorists is that social or cultural learning is most pronounced when we act in the face of informational deprivation or, more fully, when acting in the face of little or no *nonsocial* information.[270] When that is the situation—when we have too little time to investigate or when we know too little to extract additional

265. Lucía Vaquero et al., *What You Learn and When You Learn It: Impact of Early Bilingual & Music Experience on the Structural Characteristics of Auditory-Motor Pathways*, 213 NEUROIMAGE 1, 2, 8 (2020).

266. *See, e.g.*, Silvina Montrul, *First Language Retention and Attrition in an Adult Guatemalan Adoptee*, *in* FIRST LANGUAGE ATTRITION 91, 94 (Monika S. Schmid & Barbara Köpke eds., 2013).

267. *See id.*

268. *Id.*

269. HENRICH, *supra* note 18, at 62-65.

270. *See generally* LALAND, *supra* note 116.

information from the environment—our default strategy is to copy others.[271] This is not a conscious strategy or one adopted by rational deliberation. As Laland describes, copying is the default strategy of countless species, from stickleback fishes to primates.[272] In humans, the strategic goals of imitation apparently range from establishing trust and reducing suspicions, to burnishing and maintaining a good reputation, to enhancing our social learning capacities with ever greater copying efficiency and fidelity.[273]

Henrich agrees. Our evolved capacities for cumulative cultural knowledge, he says, dispose us to copy and learn from others under more or less specific conditions.[274] When are we most likely to imitate and thereby learn from others? He answers this way:

> [W]hen problems are difficult, situations are ambiguous, or individual learning is costly, people should rely more heavily on learning from others.... [C]ultural learning will tend to dominate our experiences and intuitions in domains that are important but too costly or impossible to explore through personal experience or trial and error. Think religion and ritual.[275]

Religion and ritual are, of course, normatively loaded.[276] Religious institutions regulate behavior with a variety of norms, and the normative pressures imposed by institutionalized rituals are undeniable.[277] Yet even noninstitutionalized religious beliefs are coupled with behavioral norms.[278] If you eschew membership in religious institutions but believe in a personal god of some sort or believe you will survive your earthly death, those beliefs will likely commit you to a range of prescriptions and prohibitions shared with other believers.

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271. *Id.* at 27-28.
272. *Id.* at 8-9.
273. *Id.* at 27-29.
274. HENRICH, *supra* note 1, at 62-65.
275. *Id.* at 64-65.
276. *See generally* HENRY NELSON WIEMAN & REGINA WESTCOTT-WIEMAN, NORMATIVE PSYCHOLOGY OF RELIGION (1935); Matt J. Rossano, *The Essential Role of Ritual in the Transmission and Reinforcement of Social Norms*, 138 PSYCH. BULL. 529 (2012).
277. *See generally* WIEMAN & WESTCOTT-WIEMAN, *supra* note 276.
278. *Cf.* Rossano, *supra* note 276, at 539-43.

Further, the norms that function in religious institutions or personal religious beliefs have a powerful influence on moral and legal norms. Many people, at least in contemporary Western countries, see their deepest moral commitments as derived from their religious commitments.[279] Insofar as legal systems are designed to embody the moral norms of the citizenry, the importance of Henrich's observation concerning religion and ritual is difficult to exaggerate: we rely heavily on social imitation when it comes to internalizing and adhering to the religious, moral, *and* legal norms of our culture.[280]

If, therefore, cultural evolutionary theorists are right—if we are indeed most inclined to copy, imitate, and learn from others regarding matters of genuine concern when it is impossible or costly to learn from trial and error—then we ought not underestimate the staying power within our psychology of the moral and legal norms acquired while growing up. This point can be put as a question: What *nonsocial* sources do most citizens consult or investigate before internalizing the moral and legal norms of their culture? Indeed, what nonsocial sources *can* they consult?

The force of these questions is particularly acute if, as Henrich claims, the success of persons growing up in the normative landscape of their specific culture depends, in part, on their ability "to preferentially target their interactions toward those most likely to share their norms."[281] Our capacity to preferentially interact with individuals who have internalized the same norms that we have internalized is part of what makes human psychology so tribal. Being tribal, moreover, was and perhaps still is causally integral to the survival of our species (though it is simultaneously a looming threat to our survival).[282] The thought, of course, is that our ancestors, by sharing norms and thus cooperating as a group, successfully addressed local selective pressures and outperformed other, competing species.[283]

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279. *See* Ryan McKay & Harvey Whitehouse, *Religion and Morality*, 141 PSYCH. BULL. 447, 447 (2015).

280. *See* HENRICH, *supra* note 1, at 67.

281. HENRICH, *supra* note 18, at 200.

282. *See generally* JOSHUA GREENE, MORAL TRIBES: EMOTION, REASON, AND THE GAP BETWEEN US AND THEM (2013).

283. *See* HENRICH, *supra* note 18, at 166-84. As Henrich notes, cultural group selection does

Thus, the point concerning social learning and the generalization challenge may be put this way: the diversity of norm psychologies is, at least in part, a product of cultural group selection, of processes that selected for the capacity to preferentially interact with other individuals whose internalized norms resemble one's own.[284] This disposition is not a norm acquired via learning; it is an evolved, built-in mechanism that makes cultural learning possible.[285] It is, according to theories of cultural evolution, a mechanism operating at some depth in the social psychology of our species. As such, our capacities as agents, by inclining us toward those who resemble us with respect to internalized norms, thereby incline us away from those who are normatively different.[286] There is, at minimum, an evolved affective and cognitive bias against what is different from and potentially opposed to our own internalized norms.

CONCLUSION

As we imagine the future of law and the sciences of the human, we see what we are presently able to project. It is reasonable to project, for example, evolving notions of legal responsibility and punishment—perhaps even the elimination of such notions—to better reflect our knowledge of the neural mechanisms of human agency.[287] That is to imagine a better fit between law and the actual constitution of organisms governed by law. We may even hope that, by virtue of our laws, we become fairer, more forgiving, and less barbaric.

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not require direct confrontation between two or more groups. *Id.* at 167-68. Suppose one group cooperates well and thereby satisfies the selective ecological pressures it faces. Suppose a second group does not cooperate as well and is thereby gradually diminished by its inability to satisfy the selective pressures it faces. That qualifies as cultural group selection despite the absence of interactions between the groups. *See id.*

284. *See id.* at 200.

285. *See supra* Parts II-III.

286. Hruschka & Henrich, *supra* note 114, at 1.

287. *See generally, e.g.*, Peter A. Alces & Robert M. Sapolsky, *Nohwere*, 63 WM. & MARY L. REV. 1079 (2022); Paul Sheldon Davies, *Foundational Facts for Legal Responsibility*, *in* NEUROINTERVENTIONS AND THE LAW: REGULATING HUMAN MENTAL CAPACITY 319 (Nicole A. Vincent et al. eds., 2020); Paul Sheldon Davies, *Skepticism Concerning Human Agency*, *in* NEUROSCIENCE AND LEGAL RESPONSIBILITY 113 (Nicole A. Vincent ed., 2013).

When, by contrast, we project from what is presently known of the diversity of norm psychologies, the imagined results are less well-focused and by no means hopeful. That there exist substantively diverse norm psychologies across Homo sapiens appears well-supported, as we discussed in Part I. In addition, if the considerations offered in Parts III-V are plausible, then the staying power of deep differences in norm psychologies is also well-supported. Indeed, the effects of cultural evolution on human psychology are not optional merely because they are cultural. To the contrary, the evolved mechanisms that make us the cultural animal par excellence are part of our biological constitution. It thus seems reasonable to imagine that the differences in norm psychologies between distinct ethnolinguistic lineages that live in a single country will likely produce chaos and confusion on all sides. Such confusion will emerge to the extent that the norms of that country fail to fit, psychologically speaking, the diversity of norm psychologies. If, in addition, Henrich's pessimism concerning our capacity to engineer effective social institutions is justified—if deliberately imposing unfamiliar norms on ourselves or others, even when done with good intentions, fails to lower the probability of conflicts[288]—then the generalization challenge cannot be seen as susceptible to an easy resolution.

288. HENRICH, *supra* note 18, at 331.