Essay

Bounded Entities and (Some of) Their Discontents

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INTRODUCTION

In his new article *An Organizational Theory of International Technology Transfer*,[1] Professor Peter Lee offers two richly detailed accounts at once. One is a novel theoretical framework of "bounded entities" that generalizes both from the classic theory of the firm[2] and, of more recent vintage, from the knowledge-based theory of the firm[3] to specify a broader notion of organizations that are bounded in the sense of robust internal integration through corporate or contractual means.[4] In short, such entities are not firms but resemble them in consequential ways. The other account is a practical elaboration of bounded entities that are multinational in nature and so can facilitate cross-border technology transfer.[5] The result is an important contribution to

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1. Peter Lee, *An Organizational Theory of International Technology Transfer*, 108 MINN. L. REV. 71 (2023).

2. *See*, *e.g.*, Ronald H. Coase, *The Nature of the Firm*, 4 ECONOMICA 386 (1937).

3. *See*, *e.g.*, Bruce Kogut & Udo Zander, *Knowledge of the Firm, Combinative Capabilities, and the Replication of Technology*, 3 ORG. SCI. 383, 384 (1992); Érica Gorga & Michael Halberstam, *Knowledge Inputs, Legal Institutions and Firm Structure: Towards a Knowledge-Based Theory of the Firm*, 101 NW. U. L. REV. 1123 (2007).

4. *See* Lee, *supra* note 1, Part III.B.

5. *Id.* at Part IV.

literatures on intellectual property, industrial organization, and the economics of information goods.[6]

This Essay offers some initial points of entry into Professor Lee's arguments. First is to contest his reliance on a view of nonrivalry that, widely held though it is, recent theoretical work calls into question. Second, and related, is to probe a sanguine view about welfare effects from forced technology transfer, especially in the context of U.S.-China relations. Third is to suggest that the present conception of bounded entities as a matter of organizational form has important antecedents in other legal contexts including sovereignty, culture, and personhood—and that these other contexts offer interesting possibilities for further theoretical development.

I. RETHINKING ASSUMPTIONS OF NONRIVALRY

Turning first to nonrivalry, the point of contention actually arrives rather late in Professor Lee's overall argument, which is to say that there is much to agree with up to that point.

A. THE PROBLEM IN BRIEF

The key problem of international technology transfer—indeed, of all technology transfer—is the practical difficulty of conveying tacit knowledge from one person or entity to another. Patents reduce the scope of this difficulty to the extent that they codify at least some knowledge and publicly disseminate it in accordance with the relevant patent law requirements of disclosure.[7] In this way, patents reduce how much of the knowledge sought to be transferred remains tacit. Of that remainder, firms play a further role by directly promoting tacit knowledge transfer by lowering the transaction costs associated with the "personal contact, involving teaching, demonstration, and

6. Indeed, by offering a new theory with its premises, justifications, and limitations immediately alongside a thorough application of that theory, Professor Lee gratifyingly seems to have resisted an often well-intentioned suggestion—and, in any case, one that is quite commonplace—among academics that "it seems you have two papers here." As one who is increasingly grouchy about that adage, I believe Professor Lee has one exceptional paper here.

7. *See* Lee, *supra* note 1, Part I (discussing the role and effectiveness of patents at promoting international technology transfer).

participation" that most effectively promotes tacit knowledge transfer both domestically and across national borders.[8]

From here, the argument shifts from prior literature to Professor Lee's contribution of abstracting up from firms as traditionally understood to bounded entities more generally. Like knowledge-based firms, knowledge-based bounded entities "promote the internal transfer of not only tacit knowledge but also trade secrets, which may be codified."[9] This situates bounded entities in a liminal space between classic integrated firms and market transactions at arm's length. Market transactions are most hospitable to knowledge that is codified and public, such as in patents. They are rather less hospitable to tacit knowledge, which is both uncodified and nonpublic. And they are of mixed value at best with regard to trade secrets, which are nonpublic but at least somewhat capable of being codified. In this tripartite scheme, classic integrated firms fare considerably better than market transactions at transferring tacit knowledge.

Professor Lee posits first that firms fare better than market transactions at transferring even trade secrets, despite trade secrets' codifiability, because of risks associated with trade secret leakage and other forms of misappropriation.[10] He posits next that this comparative advantage at transferring nonpublic knowledge, both uncodified (tacit knowledge) and codified (trade secrets), not only characterizes classic integrated firms but also extends to a larger category of legal constructs that he terms bounded entities.[11] Such bounded entities are effective at promoting technology transfer and, in the case of multinational bounded entities, international technology transfer.

The contested part of the argument comes next, in the normative evaluation of bounded entities including mandatory joint ventures and forced technology transfer of the sort that China's national industrial policy now regularly requires.[12]

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8. *Id.* at 105. *See generally id.*, Part II (discussing the role of firms and especially, in Parts II.C and II.D, of knowledge-based firms in general and multinational knowledge-based firms in particular).

9. *Id.* at 109.

10. *Id.* at 110–12.

11. *Id.* at 112–16.

12. *See id.* at 109, Part VI.A (assessing the role of multinational bounded entities in international technology transfer).

B. THE NORMATIVE ROLE OF NONRIVALRY

While acknowledging that mandating joint ventures and forcing technology transfers are, indeed, quite detrimental from the perspective of nationalist concerns,[13] Professor Lee starts from a posture of more conventional aggregate welfare analysis.[14] That welfare analysis, in turn, takes as given that the efficiency of transferring informational assets including tacit knowledge and trade secrets rests on the nature of information as a nonrival good:[15]

> Like all technical knowledge, tacit knowledge and trade secrets are nonrival, meaning that their exploitation by one party does not limit their availability for others. Thus, for instance, millions of entities (in the U.S., China, and other countries) could exploit the technical information inhering in an invention without "consuming" that information out of existence. Classic information economics suggests that allowing free access to existing knowledge maximizes "static" efficiency; since information cannot be overconsumed, it should be freely available to all to use. This in turn suggests a benefit to forced technology transfer, as it widens access to nonrival, inexhaustible technical knowledge.[16]

In making this move, Professor Lee stands on firm historical ground, from Founding Era support in Thomas Jefferson[17] to modern theoretical support in Kenneth Arrow.[18] The upshot is a "benefit to forced technology transfer, as it widens access to nonrival, inexhaustible technical knowledge."[19]

This efficiency gain is, of course, merely static and assumes that the good already exists. Dynamic inefficiency might still arise to the extent that future prospects of immediate widespread free riding make it unattractive to invest in the production of information goods in the first place. Meanwhile, more widely disseminating information may also promote dynamic efficiency by "by lowering the cost of downstream innovation and

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13. Most saliently, such concerns include economic competitiveness, military readiness, and national security.

14. Lee, *supra* note 1, at 145.

15. *Id.* at 146.

16. *Id.* at 146–47 (internal citations omitted).

17. *Id.* at 146 n.343 (citing Letter from Thomas Jefferson to Isaac McPherson (Aug. 13, 1813)).

18. *Id.* at 147 n.345 (citing Kenneth J. Arrow, *Economic Welfare and the Allocation of Resources for Invention*, *in* THE RATE AND DIRECTION OF INVENTIVE ACTIVITY: ECONOMIC AND SOCIAL FACTORS 609, 616–17 (1962)).

19. *Id.* at 147.

increasing the number of actors engaged in parallel innovation."[20] Thus, it seems the only battleground is dynamic (in)efficiency: static efficiency is taken to be necessarily positive—because information is inexhaustible and thus nonrival.

C. INTERFERENCE IN CONSUMING INFORMATION

The problem with this view of static efficiency is that it rests on a specific and contingent understanding of rivalry that is concerned only with competing claims to consumptive use—hence the aforementioned lack of worry about consuming information out of existence. Yet this is not the end of the inquiry. A growing body of commentary has begun to reconceive information as rivalrous.[21]

For one thing, a range of informational goods, including those that may be subject to intellectual property protection, do reflect departures from nonrivalry even as a matter of consumption alone. Negative congestion externalities often arise whereby one's consumption of an information good is degraded by further consumption of the same good by others, such as a song that is overplayed to the point of cliché[22] or a fashion trend that is popularized to the point of social indistinction.[23] One might object to this framing, responding perhaps that the *song* and the *fashion trend* are not themselves rivalrous. One can still consume them nonrivally in the sense of being able to hear the song and adopt the fashion to same full extent, and it is merely the subjective enjoyment of each that is degraded.

But that untethering of economic utility—i.e., the satisfaction of actual individual preferences—from bare consumption for its own sake is precisely the problem with the prevailing view that information is necessarily nonrival. Tangible goods, for their part, are routinely evaluated with regard to the congestion externalities that their consumption inflicts upon others' utility even when such goods might appear at first to be nonrival, such as a highway with free-flowing traffic that later becomes

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20. *Id.* at 147–48.

21. I am indebted to the influence of Professor James Stern in my thinking on rivalry in information goods. Accordingly, the analysis here relies principally on his work while noting much other important scholarship on the subject.

22. James Y. Stern, *Intellectual Property and the Myth of Nonrivalry*, 99 NOTRE DAME L. REV. 1155, 1161 (2024).

23. Barton Beebe, *Intellectual Property and the Sumptuary Code*, 123 HARV. L. REV. 809, 824–25 (2010).

crowded.[24] Meanwhile, if the objection is that utility itself should be defined only as the satisfaction "that one derives regardless of how one's consumption compares to that of others" but not as the satisfaction "that one derives from how one's consumption compares to the consumption of others,"[25] then that is a normative move requiring its own justification rather than a self-evident attribute of the information good.

There is good reason to be skeptical of that normative move. The interference between consumers of the same information good might be called a diminishment of "relative utility" as a general matter of economic theory.[26] It might be called "hedonic harm" as a matter of consumer responses to trademarked brands.[27] Or it might be called the "overgrazing" of limited consumer attention through overuse of a particular image that generates "confusion, the tarnishing of the image, or sheer boredom on the part of the consuming public."[28] In any case, the interference is real and cannot be assumed away without undermining the force of resulting arguments about the supposed nonrivalry of information.

D. PREFERENCES OTHER THAN CONSUMPTION

The conceptual problem goes deeper still. Thus far, the critique has focused on treating rivalry or nonrivalry only in terms of competing claims to consumptive uses. There is no *a priori* reason, however, to exclude preferences of non-use from the economic utility function.[29] For an information good to be nonrival in the formal sense, the marginal cost of consuming the good must be zero and the consumption must entail no negative externalities at all.[30] As a matter of resource conflict, an information good is entirely capable of generating such conflict where "one person wants to use it and another simply wants that person not to use it, even if the other person does not wish to use it

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24. Stern, *supra* note 22, at 1161.

25. Beebe, *supra* note 23, at 825.

26. *Id.* at 825 n.74 (collecting cites).

27. Irina D. Manta, *Hedonic Trademarks*, 74 OHIO ST. L.J. 241, 247–49 (2013).

28. William M. Landes & Richard A. Posner, *Indefinitely Renewable Copyright*, 70 U. CHI. L. REV. 471, 485–86 (2003).

29. Stern, *supra* note 22, at 1161.

30. *Id.* (citing RONALD H. COASE, THE FIRM, THE MARKET, AND THE LAW 24 (1988)).

herself in any active, affirmative sense."[31] Here, too, tangible property is certainly well familiar with preferences of non-use and poses no conceptual bar to vindicating them.[32]

Examples abound of conflicting preferences about the disposition of information goods where one claimant prefers use while a second claimant prefers non-use by the first claimant—from the use of copyright law to suppress dissemination of literary or musical works for socially, politically, or personally disfavored ends to the use of patent law to bar certain pharmaceutical drugs in capital punishment, among others.[33] In fact, the claimant who prefers non-use need not even be the creator of the information good, as in the case of fans who object to the alteration of artistic works by the artist or the case of medically vulnerable patients who object to the liberal use of antibiotics across the general population for fear of emergent antibiotic resistance.[34] The critique of nonrivalry in information extends still further to privacy laws, various forms of legal privilege, compulsory disclosure via freedom of information law, and the use of law to effectuate censorship.[35]

What intellectual property law—and, indeed, all laws that govern firms or bounded entities—ought to do about these competing preferences is another question. Answering it with completeness, however, calls for a frank reassessment of the normative assumptions about utility and welfare that are embedded in the current view of static efficiency. Consumption and

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31. *Id.*

32. Professor Stern elaborates:

> Someone might wish to see property go unused because she favors non-use as an end in itself—think of land conservation, for instance—or because she disapproves of a more specific use, as when the manufacturer of the Cards Against Humanity game bought land near the U.S.-Mexican border solely to prevent construction of a wall by the U.S. government. Or someone might wish to deny a particular person access to a resource because she opposes a cause that person more generally seeks to advance, or perhaps because she simply does not like the person. It is also the case that property held for investment or commercial purposes by rights holders with no desire to consume the resources themselves is ubiquitous.

Id. at 1162.

33. *Id.* at 1182–84.

34. *Id.* at 1184–85.

35. *Id.* at 1186–87.

affirmative use are only part of the picture, and legitimate preferences for non-use do much to complicate the analysis.

II. RETHINKING TOLERANCE FOR FORCED INFORMATION TRANSFER

One direct implication of preferences for non-use is the notion that, because "mandatory joint ventures that transmit tacit knowledge and trade secrets to China allow more entities to exploit (nonrival) technical knowledge," it must therefore follow that "[t]his greater access increases static efficiency."[36] At the very least, assessing static efficiency effects require accounting for not only the benefits to domestic Chinese firms from using the relevant tacit knowledge and trade secrets but also the harms to non-Chinese partners who squarely prefer non-use by the Chinese firms. That altered accounting injects new uncertainty into Professor Lee's thesis, as the key empirical question is no longer solely "whether the static and dynamic benefits of greater access to foreign tacit knowledge and trade secrets are outweighed by the dynamic harms to incentives to invent."[37] It is also empirically important how much the static harms of greater access to foreign (potentially rival) tacit knowledge tip the scale.

Moreover, the potential static harms in question are not limited to hedonic or aesthetic displeasure. From the perspective of the non-Chinese partner in a mandatory joint venture, unconsented uses of tacit knowledge, trade secrets, or both create a disincentive against shifting production to China and, indeed, to lower-cost countries in general.[38] Apart from any effect on dynamic incentives to innovate, this outcome would beget even static losses by "prevent[ing] low-cost countries from fully realizing their comparative advantage in manufacturing *established* products" and by raising production costs for innovator countries.[39]

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36. Lee, *supra* note 1, at 147.

37. *Id.* at 148.

38. *See* Lee G. Branstetter, *China's Forced Technology Transfer Problem—and What to Do About It*', PETERSON INST. FOR INT'L ECON. 3 (2018), http://www.piie.com/sites/default/files/documents/pb18-13.pdf [https://perma.cc/G8Q3-4ULB].

39. *Id.* at 3–4 (emphasis added) (citing Lee Branstetter, Ray Fisman, Fritz Foley & Kamal Saggi, *Does Intellectual Property Rights Reform Spur Industrial Development?*, 83 J. INT'L ECON. 27 (2011)).

A serious appraisal of potential static harms and, as a result, potential overall static inefficiency from forced information transfer also calls into question the conclusion that "continu[ing] to participate in joint ventures with Chinese partners" despite "losing tacit knowledge and trade secrets" "suggests that doing so enhances [U.S. firms'] individual welfare."[40] The reluctance of firms (or bounded entities, as the case may be) that suffer cross-border expropriation to disclose either the details of their resulting economic vulnerability or the technical details of the expropriated knowledge assets themselves is also consistent with a loss of individual welfare, simply one that is unlikely to be redressed.[41] Similarly, the diffusion of technological innovation across the full range of innovator nations means that any unilateral response to forced information transfer could lock the objecting firms "out of Chinese markets and still allow forced technology transfers to happen through firms based in other advanced industrial nations"[42]—to the detriment even of the firms that abstained. The resulting collective action problem is yet another explanation for continued engagement with a regime of forced information transfer and one that is consistent with a loss of individual welfare.

These theoretical and practical challenges represent fruitful avenues for further developing and defending the theory of bounded entities and for further elaborating that theory's role in facilitating international technology transfer.

III. EXPLORING ANTECEDENTS TO THE ORGANIZATIONAL BOUNDED ENTITY

Turning now from responses that are internal to Professor Lee's thesis toward some suggestions that are external to it, it bears mention that the notion of bounded entities, a term that he coins in the context of organizational forms, has important antecedents in other fields of legal inquiry. These fields, in turn, also offer possibilities and templates for further theorizing and borrowing.

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40. Lee, *supra* note 1, at 145.

41. Branstetter, *supra* note 38, at 1.

42. *Id.* While the present example is that of China, the principle would of course apply to any nation with a comparably attractive domestic market that engages in forced information transfer.

A. SOVEREIGNTY

One set of antecedents comes from conceptions of sovereignty in international relations and in subnational governance. For example, the modern nation-state is routinely described in the literature as a bounded entity by reference to certain necessary or sufficient criteria that do the bounding. Those criteria may include "defined territory, a permanent population, and continuously identifiable collective interests"[43] as well as politically reciprocal restrictions imposed by "the Westphalian system of sovereign states,"[44] among others.[45] The premodern kingdom-state is similarly understood as "a geographically bounded entity subject to the uniform power of state control."[46] Indeed, the centrality of boundedness to understanding national sovereignty is not limited merely to first-order questions of delineation but also extends to higher-order questions of administration such as regulating the influx and outflux of people, tangible things, and ideas across the resulting boundaries.[47]

Meanwhile, in the realm of subnational governance, the conception of local government as a bounded entity underpins a wide array of debates about the nature and scope of local autonomy in general, about home rule in particular subject to increasingly contested principles such as Dillon's Rule, and about the resolution of competing state-versus-local government claims to

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43. Note, *Constructing the State Extraterritorially: Jurisdictional Discourse, the National Interest, and Transnational Norms*, 103 HARV. L. REV. 1273, 1275 (1990).

44. David Fitzgerald, *Rethinking Emigrant Citizenship*, 81 N.Y.U. L. REV. 90, 115–16 (2006).

45. *E.g.*, Davis B. Tyner, *Internationalization of War Crimes Prosecutions: Correcting the International Criminal Tribunal for the Former Yugoslavia's Folly in Tadic*, 18 FLA. J. INT'L L. 843, 863 n.123 (2006); Jost Delbrück, *Exercising Public Authority Beyond the State: Transnational Democracy and/or Alternative Legitimation Strategies?*, 10 IND. J. GLOBAL LEGAL STUD. 29, 38–39 (2003); Andrew J. Strathern & Pamela J. Stewart, *The Problems of Peace-Makers in Papua New Guinea: Modalities of Negotiation and Settlement*, 30 CORNELL INT'L L.J. 681, 681–82 (1997); Alastair Iles, *The Desertification Convention: A Deeper Focus on Social Aspects of Environmental Degradation?*, 36 HARV. INT'L L.J. 207, 211 (1995).

46. David M. Engel, *Litigation Across Space and Time: Courts, Conflict, and Social Change*, 24 LAW & SOC'Y REV. 333, 339–40 (1990).

47. *See generally* Adam B. Cox, *Immigration Law's Organizing Principles*, 157 U. PA. L. REV. 341 (2008).

power and resource consumption.[48] Likewise, and in response to the perennial boundary-definition challenge in local government law, commentators also speak of so-called "special districts" as reflecting a type of bounded entity that is larger than an individual locality and having "a limited mandate to provide a service that would benefit from regional economies of scale."[49]

B. CULTURE AND PERSONHOOD

Another set of antecedents comes from conceptions of culture and even of the self as reflecting boundedness or unboundedness, as the case may be.[50] For example, in defining the circumstances under which cultural or traditional information may be transmitted, there is good reason to question how bounded and separate the involved entities truly are—indeed, how separate even the cultures and traditions themselves truly are.[51] That view of cultural unboundedness also extends to related contexts, such as questioning the supposed edges of racial identity and racialized practices,[52] the supposed markers and indicia of indigeneity and ethnicized practices,[53] and the imposition of

48. *See generally* David J. Barron, *Reclaiming Home Rule*, 116 HARV. L. REV. 2255 (2003). *See also* Ileana M. Porras, *The City and International Law: In Pursuit of Sustainable Development*, 36 FORDHAM URB. L.J. 537, 586–87 (2009) (citing William E. Rees, *Ecological Footprints and Appropriated Carrying Capacity: What Urban Economics Leaves Out*, 4 ENV'T & URBANIZATION 121 (1992)).

49. Richard Briffault, *The Local Government Boundary Problem in Metropolitan Areas*, 48 STAN. L. REV. 1115, 1145 (1996).

50. *See* JUDITH BUTLER, RESTAGING THE UNIVERSAL: HEGEMONY AND THE LIMITS OF FORMALISM, IN CONTINGENCY, HEGEMONY, UNIVERSALITY: CONTEMPORARY DIALOGUES ON THE LEFT 20 (2000) (arguing that "[c]ultures are not bounded entities" and that "the mode of their exchange is, in fact, constitutive of their identity").

51. Stephen M. Feldman, *The Politics of Postmodern Jurisprudence*, 95 MICH. L. REV. 166, 179–80 (1996). *See also* FREDRIK BARTH, BALINESE WORLDS 95 (1993) (rejecting a "bounded entity" view of culture and arguing instead that culture comes about through lived practice and that "we must not use our constructs of these in turn as a kind of explanation for those very events, activities, and relations of which they are our representation").

52. *See*, *e.g.*, Anthony V. Alfieri, *Race Trials*, 76 TEX. L. REV. 1293, 1359–60 (1998) (citing Feldman, *supra* note 51).

53. *See*, *e.g.*, Matthew Doyle, *The Case of Piruani: Contested Justice, Legal Pluralism, and Indigeneity in Highland Bolivia*, 44 POLAR: POL. & LEGAL ANTHROPOLOGY REV. 60, 61 (2021); Ajay K. Mehrotra, *Law and the "Other": Karl N. Llewellyn, Cultural Anthropology, and the Legacy of the Cheyenne Way*, 26 LAW & SOC. INQUIRY 741, 771 (2001).

property and property-like rules upon the terms of cultural exchange.[54]

This view is by no means a consensus, however. If anything, it reflects a reaction to (and ongoing dialogue with) another, potentially more essentialist view of cultures as indeed being "discrete, bounded entities that regulate conduct."[55] And even so, for all its risk of essentialism, this alternative view has itself been concerned with liberal priorities of cultural openness and exchange, as in the example of allowing details about cultural background to serve as defensive evidence in legal proceedings.[56]

Meanwhile, homing in further from culture to the individual reveals still more notions of the bounded entity as a contested characterization of personhood and self. At one side is skepticism that the individual is authentically autonomous in the sense of being "neatly bounded," skepticism that has roots ranging from confessional Christian theology in the Patristic Period[57] to postmodern views of identity and authorship.[58] At the other side is avid embrace of that view, be it in feminist discourse about

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54. *Compare*, *e.g.*, Rosemary J. Coombe, *The Expanding Purview of Cultural Properties and Their Politics*, 5 ANN. REV. L. & SOC. SCI. 393 (2009), *with* Richard Handler, *Cultural Property and Culture Theory*, 3 J. SOC. ARCHAEOLOGY 353 (2003).

55. Sigurd D'hondt, *The Cultural Defense as Courtroom Drama: The Enactment of Identity, Sameness, and Difference in Criminal Trial Discourse*, 35 LAW & SOC. INQUIRY 67, 68 (2010).

56. *See id.* (citing cautionary critiques in ANNE PHILLIPS, MULTICULTURALISM WITHOUT CULTURE (2007); Leti Volpp, *Blaming Culture for Bad Behavior*, 12 YALE J.L. & HUMANITIES 89 (2000); Leti Volpp, *Talking "Culture": Gender, Race, Nation, and the Politics of Multiculturalism*, 96 COLUM. L. REV. 1573 (1996); Holly Maguigan, *Cultural Evidence and Male Violence: Are Feminist and Multiculturalist Reformers on a Collision Course in Criminal Courts?*, 70 N.Y.U. L. REV. 36 (1995); Leti Volpp, *(Mis)Identifying Culture: Asian Women and the Cultural Defense*, 17 HARV. WOMEN'S L.J. 57 (1994)).

57. *See* KEVIN M. CROTTY, LAW'S INTERIOR: LEGAL AND LITERARY CONSTRUCTIONS OF THE SELF 115 (2001) (explaining that, "[f]or Augustine, this sense of the self as a neatly bounded entity is not at all a lofty conception, but an unexamined and misleading one: just what we tend (wrongly) to think about ourselves").

58. *See* Elizabeth Townsend Gard, *Conversations with Renowned Professors on the Future of Copyright*, 12 TUL. J. TECH. & INTELL. PROP. 35, 79 (2009) (quoting Professor Mark Rose, who finds it "liberating to realize that my sense of myself as a distinct and bounded entity is an artifact of language, culture, and history").

rights of bodily integrity[59] or in comparative legal study about the extent to which cultures favor the individual who is "embedded" in the solidary group or instead the one who is "an autonomous, bounded entity who finds meaning in his or her own uniqueness."[60]

Here, too, the lack of consensus is less important than the existence of a theoretical framework in which to assess and compare variously bounded and unbounded conceptions of the self. Such assessment and comparison are of a piece with Professor Lee's analysis of bounded and unbounded organizational forms as to their effectiveness in affirmatively promoting information transfer, prophylactically guarding against information leakage, and grappling with the consequences of information expropriation.

C. REFINING THE ORGANIZATIONAL BOUNDED ENTITY

The prospective value of these antecedents to refining a theory of organizational bounded entities is open-ended. One approach is to apply the template from sovereignty somewhat literally and consider whether the conception of modern nation-states as bounded entities should influence the legal contours of multinational bounded entity that does business in those nation-states. For example, debates and lessons from the law of international relations might point increasingly toward a normative view of nations as only partially bounded entities with occasional or even frequent leakage in the necessary or sufficient criteria for nationhood, such as the resilience of territorial definitions, the permanence of a domestic population, and so on.

Those debates and lessons might point the way in turn for organizational bounded entities to tolerate correspondingly greater leakage of information goods within their purview in order to, for example, avoid incurring internal managerial and monitoring costs that needlessly establish greater informational security than what a partner government itself were willing to incur. Or they might do just the opposite, spurring organizational bounded entities to guard even more stringently against

59. *See* MARTHA MCCAUGHEY, REAL KNOCKOUTS: THE PHYSICAL FEMINISM OF WOMEN'S SELF-DEFENSE 167–69 (1997) (referring to "the body as a bounded entity" as a basis for autonomy and full membership in the polity).

60. *See* Shalom H. Schwartz, *A Theory of Cultural Value Differences and Some Implications for Work*, 48 APPLIED PSYCHOLOGY' 23 (1999).

information leakage to compensate. The key insight is that the conception of boundedness in organizational form is linked—whether directly or inversely—as a theoretical matter with the conception of boundness of the sovereign state. Indeed, this sort of linkage may already be in offing given the high entanglement of state-owned enterprises with sovereign structure.

Another approach is to apply the templates from culture or personhood to organizational bounded entities whose stock in trade is not tacit knowledge in technical domains but rather tacit knowledge pertaining to collective cultural production, individual creative expression, the preservation of traditional heritage, and the like. Much as the codification of public technical knowledge into patents and of nonpublic technical knowledge into trade secrets is incomplete without an adequate account of how uncodified tacit knowledge is transferred,[61] so also the production and preservation of cultural goods is intimately informed by tacit knowledge.

Tacit knowledge is a significant dimension of cultural practices[62] and innovation processes[63] in general, and of creative and artistic expression in particular.[64] It plays a significant role in preparing new entrants for participation in creative industries.[65] And it is of signal importance in preserving and transmitting traditional heritage,[66] especially insofar as it is closely connected to oral tradition-based methods of codification.[67] Extending the

61. Lee, *supra* note 1, at 100–05, 110–12.

62. *See generally* Helena Miton & Simon DeDeo, *The Cultural Transmission of Tacit Knowledge*, J. ROYAL SOC'Y INTERFACE, Oct. 19, 2022, at 1.

63. *See generally* Christopher Buccafusco, Stefan Bechtold & Christopher Jon Sprigman, *The Nature of Sequential Innovation*, 59 WM. & MARY L. REV. 1 (2017).

64. *See generally* Madhavi Sunder, *Intellectual Property in Experience*, 117 MICH. L. REV. 197, 238–40 (2018); Margaret Chon, *Sticky Knowledge and Copyright*, 2011 WIS. L. REV. 177 (2011).

65. *See*, *e.g.*, Branka Marinkovic, *Tacit Knowledge in Painting: From Studio to Classroom*, 40 INT'L J. ART & DESIGN ED. 389 (2021); Xin Gu & Justin O'Connor, *Teaching 'Tacit Knowledge' in Cultural and Creative Industries to International Students*, 18 ARTS & HUMANITIES IN HIGHER ED. 140 (2019); Kylie Budge, *Teaching Art and Design: Communicating Creative Practice through Embodied and Tacit Knowledge*, 15 ARTS & HUMANITIES IN HIGHER ED. 432 (2016).

66. Madhavi Sunder, *The Invention of Traditional Knowledge*, 70 SPG LAW & CONTEMP. PROBS. 97, 121–23 (2007).

67. *See*, *e.g.*, Narendra Singh, *Reconstructing Cultural Heritage Through Oral Traditions of the Meiteis of Manipur*, *in* THE CULTURAL HERITAGE OF

account of organizational bounded entities to these endeavors would be a valuable descriptive contribution in its own right. Linking the boundedness (or unboundedness) of culture and the self to the boundedness of entities that immerse themselves in cultural production and self-expression would enlarge its theoretical impact as well.

CONCLUSION

Taken together, Professor Lee's theory of "bounded entities" as an extension of the knowledge-based theory of the firm and his application of that theory to the problem of international technology transfer represent fertile new terrain for inquiry. The focus of this reply has been partly internalist, challenging the theory's reliance on a view of informational nonrivalry that is dominant in the literature but subject to significant recent critique—and problematizing the resulting view of welfare effects from forced technology transfer. It has also been partly externalist, identifying antecedents in other legal contexts for the theory of organizational bounded entities. These include conceptions of sovereign nation-states, cultures, and individual persons as either bounded or at least partially unbounded entities, conceptions that may be linked in theoretically enriching ways to Professor Lee's project.

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