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Copyright in Teams

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Dozens of people worked together to produce Casablanca. *But a single person working alone wrote* The Sound and the Fury. *While almost all films are produced by large collaborations, no great novel ever resulted from the work of a team. Why does the frequency and success of collaborative creative production vary across art forms?*

The answer lies in significant part at the intersection of intellectual property law and the theory of the firm. Existing analyses in this area often focus on patent law and look almost exclusively to a property-rights theory of the firm. The implications of organizational theory for collaborative creativity and its intersection with copyright law have been less examined. To fill this gap, we look to team-production and moral-hazard theories to understand how copyright law can facilitate or impede collaborative creative production. While existing legal theories look only at how creative goods are integrated with complementary assets, we explore how the creative goods themselves are produced. This analysis sheds new light on poorly understood features of copyright law, including the derivative-works right, the ownership structure of a joint work, and the work-made-for-hire doctrine.

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This article is built largely on foundational theories pioneered by the late Ronald H. Coase (1910–2013). Professor Coase was of course among the most influential scholars and thinkers of all time. His work has changed the entire field of law. On a more local level, his legacy has immeasurably shaped and directed both of our educations and careers as lawyers and scholars. We along with all of the legal community are indebted to Professor Coase's work.

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INTRODUCTION

On June 11, 2012, Warner Bros. announced that it was buying Alloy Entertainment.[1] It is rumored that Warner Bros. paid $100 million for the purchase.[2] The acquisition was not surprising. Alloy owned a massive and valuable portfolio of successful book franchises including *Gossip Girl*, *The Vampire Diaries*, and *The Sisterhood of the Traveling Pants*. Alloy and Warner had collaborated in the past to turn those franchises into television and film hits.[3] Warner was bringing the portfolio and the production of future franchises in house. This sort of vertical integration—the acquisition of an upstream input producer—has been explored extensively in law and in economics.[4] The terrain

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1 See TimeWarner, *Warner Bros. Television Group Signs Deal to Acquire Alloy Entertainment from ZelnickMedia*, online at http://www.timewarner.com/newsroom/press-releases/2012/06/Warner_Bros_Television_Group_Signs_Deal_to_Acquire_06-11-2012 (visited Nov 24, 2013).

2 See Christopher S. Stewart, *Corporate Watch*, Wall St J B5 (June 12, 2012) ("The terms of the deal weren't disclosed, but a person familiar with the matter said that the price was $100 million.").

3 TimeWarner, *Warner Bros. Television Group Signs Deal to Acquire Alloy Entertainment from ZelnickMedia* (cited in note 1).

4 See generally, for example, Benjamin Klein, Robert G. Crawford, and Armen A. Alchian, *Vertical Integration, Appropriable Rents, and the Competitive Contracting Process*, 21 J L & Econ 297 (1978); Sanford J. Grossman and Oliver D. Hart, *The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration*, 94 J Polit Econ 691 (1986).

of the upstream input producer itself—the factors that determine the existence, organization, and success of firms like Alloy in the first place—has been left relatively untouched. This Article maps that territory.

Alloy owns these various book franchises because it wrote the books. The key word is "it." Alloy is a firm that makes novels the way a mining firm makes coal. For every input into a final product, a firm must answer the classic Coasean "make or buy" question. Traditional publishers buy their creative inputs from independent authors. Alloy, on the other hand, opted to make its own creativity.

And Alloy is not alone. The "firm as author" industry—sometimes referred to as "book packaging" or more favorably as "literary incubating"—has been quietly growing over the last three decades.[5] Though these firms give a lead writer credit for the novel (often under a pseudonym), the writing process unfolds under an internal nonmarket hierarchy.[6] The firm owns the copyright and negotiates with publishers as an individual author normally would.[7]

This collaborative production of books might be analogized to the production of movies, television shows, or various other creative products that are the fruits of team effort.[8] The organization of creative collaborative processes into firms is pervasive. But the law's impact on these organizations remains relatively unexamined.[9] In this Article, we explore theories of organizing

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5 Book packaging is said to have begun with the Stratemeyer Syndicate, which put out the *Nancy Drew* and *The Hardy Boys* series. See Rebecca Mead, *The Gossip Mill*, The New Yorker 62 (Oct 19, 2009). In the late 1980s, 17th Street Productions was founded as a packager and produced a hit in the *Sweet Valley High* series. From there its success grew and it was purchased by Alloy Entertainment in 2000. See Motoko Rich and Dinitia Smith, *First, Idea, Plot and Characters. Then, a Book Needs an Author*, NY Times A1 (Apr 27, 2006).

6 See Interview with Lexa Hillyer, cofounder of Paper Lantern Lit (Oct 28, 2011) ("Hillyer Interview") (on file with authors); Rich and Smith, *First, Idea, Plot and Characters*, NY Times at A1 (cited in note 5) (quoting an interview with Cindy Egan, who stated: "[I]t's kind of like working on a television show. We all work together in shaping each novel."); Mead, *The Gossip Mill*, The New Yorker at 62 (cited in note 5) (noting that the "author" of *Gossip Girl* was "an old hand at the writing-by-committee method").

7 See Hillyer Interview (cited in note 6).

8 See Rich and Smith, *First, Idea, Plot and Characters*, NY Times at A1 (cited in note 5) (quoting an interview with Cindy Egan).

9 In economics there has been more analysis of this type of organization. See, for example, Richard E. Caves, *Creative Industries: Contracts between Art and Commerce* 1–20 (Harvard 2000); Ricard Gil and Pablo T. Spiller, *The Organizational Implications of Creativity: The US Film Industry in Mid-XXth Century* *2–4 (NBER Working Paper No 13253, July 2007), online at http://www.nber.org/papers/w13253 (visited Nov 24, 2013).

collaborative creative production in a firm and address their legal implications.[10] We look to team-production and moral-hazard theories to explain how the collaborative production of creative goods is organized, not only in firms like Alloy, but throughout various creative industries. We then develop new legal theories to explain the interaction between copyright law and collaborative creative production.

In doing so, we identify a gap in the normative analysis of intellectual property law. The primary debate in intellectual property has been about ownership, access, and incentives to produce.[11] What has been absent, though, is an analysis of the way that the law affects collaborative creation. To be sure, some have explored whether copyright law favors corporate ownership of rights and whether that ownership facilitates the investments necessary to *exploit* creative works.[12] But that is a quite different question from whether copyright law facilitates the *production* of creative goods in firms and in teams.[13]

The theories of organizational hierarchies that we examine demonstrate how the law can facilitate or obstruct collaboration among creative inputs. And because collaborative creation is different in kind from noncollaborative creation, the law will impact the mix of creative products that are available. This mechanism for the law's impact on the content of our culture has been previously unexplored. With that insight, we then demonstrate the predictive and explanatory promise of these theories by exploring the implications for copyright law.

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[10] Throughout this article we refer to production of creative goods. Defining "creativity" can be difficult. Professors Gil and Spiller adopt the *Encyclopedia Britannica*'s definition in their analysis of creative organization. See Gil and Spiller, *Organizational Implications of Creativity* at *2 (cited in note 9), quoting 3 *New Encyclopedia Britannica* 721 (15th ed 2007) ("Creativity: the ability to make or otherwise bring into existence something new, whether a new solution to a problem, a new method or device, or a new artistic object or form."). See also Mark A. Runco and Garrett J. Jaeger, *The Standard Definition of Creativity*, 24 Creativity Rsrch J 92, 92 (2012) ("Creativity requires both originality and effectiveness."); Caves, *Creative Industries* at 2–10 (cited in note 9). We do the same. Most of this Article focuses on the creativity in new artistic objects or forms such as movies, books, and music. But the general analysis applies more broadly.

[11] See Jeanne C. Fromer, *Expressive Incentives in Intellectual Property*, 98 Va L Rev 1745, 1750–52 (2012).

[12] See generally Julie E. Cohen, *Copyright as Property in the Post-industrial Economy: A Research Agenda*, 2011 Wis L Rev 141.

[13] Indeed, in some cases, laws that simply favor corporate ownership of rights may in fact drive creative production out of firms and into the market. A creator who opposes default ownership by a firm she associates with may never associate with the firm in the first place.

We proceed in two parts. Part I of this Article explores theories of the organization of creative production. Legal scholars who have analyzed how firms and markets produce things covered by the label "intellectual property" have almost universally applied a property-rights theory of the firm.[14] That theory relies on allocation of residual-control rights—that is, the right to decide what to do with an asset in the event of a disagreement—to solve holdup problems. The property-rights theory is limited in explaining the organization of large swaths of creative production. Collaborative creative inputs are often a form of human capital that cannot be integrated in the property-rights sense of obtaining rights of residual control.[15] Nonetheless, we do see organizations of these creative inputs that look like firms, as the term is understood by many of the theorists of the firm, including Professors Ronald Coase, Armen A. Alchian, Harold Demsetz, and Oliver E. Williamson.[16] For example, movies are made

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[14] For the foundations of the property-rights theory, see Oliver Hart and John Moore, *Property Rights and the Nature of the Firm*, 98 J Polit Econ 1119, 1125–49 (1990); Grossman and Hart, 94 J Polit Econ at 697–716 (cited in note 4). See also Philippe Aghion and Richard Holden, *Incomplete Contracts and the Theory of the Firm: What Have We Learned over the Past 25 Years?*, 25 J Econ Persp 181, 183 (Spring 2011). Professor Robert Merges pioneered the application of the property-rights theory to intellectual property law. See Robert P. Merges, *Intellectual Property Rights, Input Markets, and the Value of Intangible Assets* *5 (unpublished draft, Feb 9, 1999), online at http://www.law.berkeley.edu/files/iprights.pdf (visited Nov 24, 2013). See also generally Ashish Arora and Robert P. Merges, *Specialized Supply Firms, Property Rights and Firm Boundaries*, 13 Industrial & Corp Change 451 (2004). For subsequent work in this area, see generally Oren Bar-Gill and Gideon Parchomovsky, *Law and the Boundaries of Technology-Intensive Firms*, 157 U Pa L Rev 1649 (2009); Dan L. Burk and Brett H. McDonnell, *The Goldilocks Hypothesis: Balancing Intellectual Property Rights at the Boundary of the Firm*, 2007 U Ill L Rev 575 (combining a property-rights theory with a Coasean transaction-costs theory of the firm); Jonathan M. Barnett, *Intellectual Property as a Law of Organization*, 84 S Cal L Rev 785 (2011); Dan L. Burk, *Intellectual Property and the Firm*, 71 U Chi L Rev 3 (2004); Érica Gorga and Michael Halberstam, *Knowledge Inputs, Legal Institutions and Firm Structure: Towards a Knowledge-Based Theory of the Firm*, 101 Nw U L Rev 1123 (2007).

[15] By focusing on residual control, holdup, and property rights, the literature ignores the nonmarket organization of inputs in which property rights do not (and cannot) exist. This is not a novel critique of the property-rights theory. It is a recurrent point of analysis in the economic literature on firms. The point, however, has not been fully explored in the context of firms and intellectual property law, where it is of central importance.

[16] There is always some unavoidable communicative disjunction in discussing "firms." Many of the differences in theoretical analyses turn on a disagreement in defining the underlying term. Our project is not defining the "firm," but rather studying law's impact on the organization of creative collaboration. In this paper we use the terms "managerial hierarchy" and "firm" in the Coasean sense to denote an organizational structure where a manager is commanding production. It is unimportant that that relationship may nominally be created by a long-term contract. The outcome is the same,

by hierarchies with a director or producer who allocates and reallocates human resources without resort to a market. Orchestras respond to the instructions of a conductor. Similarly, there is an emerging market for novels written by firms, rather than by independent authors. Our aim is to understand why these organizations arise and how the law affects their viability.

Part I applies theories of teams and moral hazard to demonstrate that these firms have emerged not to reduce holdup but to capture the value of collaborative creation that is facilitated by team production in a managed hierarchy. Indeed, the threat of holdup on the other side of the equation may often push against integration.

Part II explores the implications of this analysis for copyright law. We first note the ways in which existing law facilitates or impedes collaborative creative production. We then identify the ways in which the law might be modified so as to minimize the barriers it currently poses to the use of these organizational forms.[17] Our analysis produces predictions that are distinct from those in the existing literature.

Our focus is on the definition and ownership structure of joint works, the work-made-for-hire provision, and the derivative-works right. The joint-works doctrine identifies collaborative creative production that would be optimally produced in hierarchical firms. But the default ownership structure for joint works impedes the formation of such firms. By conflating ownership with authorship and control, the rule undermines the value and incentives of a hierarchical manager and encourages minor contributors in a collaborative production to seek rewards beyond the value of their contributions (often by unnecessary actions to create the appearance of input or control).

Disentangling ownership of joint works from authorship and control of production creates an opportunity for altering copyright's

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and the difference is semantic. Importantly, we are distinguishing hierarchical production from outright market purchase that occurs after a good is produced. There are, of course, grey areas between those extremes.

[17] We do not argue here that the law should necessarily be changed in these ways. There may be reasons why copyright law in particular or intellectual property law more generally may favor individualized production—perhaps the world has too many creative people working in teams to produce Hollywood movies and too few working alone to write novels. For now, though, our aim is to isolate copyright's effects on team production. We take as given that copyright law should make it easier for creative inputs to collaborate, and we identify how copyright law may do so. If it turns out that team production is normatively undesirable, then the shapers of the law should simply do the opposite of what we suggest.

rules to foster the organization of creative collaboration. Specifically, the work-made-for-hire doctrine, as it is applied by courts in the context of creative collaborations, is backwards. While the default ownership structure for a work made for hire is amenable to collaborative creativity, courts do not consider factors relevant to optimal creative organization when deciding whether a given relationship falls within the scope of that doctrine. The work-made-for-hire doctrine is in fact often applied precisely when the benefits of hierarchical management for creative collaborations are low.

These observations about joint works and works made for hire suggest valuable modifications to the doctrines. Specifically, applying the work-made-for-hire doctrine as the default rule for truly joint works and otherwise focusing on a new set of factors to identify works made for hire will better align intellectual property rights with an optimal organization for collaborative creativity.

We also propose a new theory to explain the derivative-works doctrine. The ability to allocate rights in derivative works improves incentives to collaborate and reduces the costs of contracting for the team production of the original product in a way that allocation of rights in the original collaborative product cannot. This improves the ability of parties to contract for the original production and allows collaborative firms to integrate creative inputs. The *stronger* the derivative-works right,[18] the cheaper the ex ante allocation of control rights in both the derivative and original product, and the more attractive the firm is relative to the market. Thus, where collaborative creativity is important, strong derivative-works rights foster potentially valuable integration.[19] This would also suggest that, where collaboration is less important, derivative-works rights are inefficient or irrelevant. This analysis suggests new ways that the rules of

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[18] A strong version of the derivative-works right would give the copyright holder control over a broad range of follow-on work; a weak version would give very little control.

[19] This is in contrast to the existing theories of intellectual property and the firm that suggest that strong property rights will lead to smaller firms. See note 14. Professors Dan L. Burk and Brett H. McDonnell have a more nuanced view suggesting that integration increases with either overly strong or overly weak property rights. In their view the optimal property rights lead to a minimal level of integration (all else equal). See Burk and McDonnell, 2007 U Ill L Rev at 626–33 (cited in note 14). Again our conclusion for derivative-works rights is in contrast: the optimal property rights may often lead to an expansion in the size of the firm because the firm fosters optimal collaboration.

intellectual property can impact the nature of society's creative output.

I. A THEORY OF CREATIVE PRODUCTION

The existing literature on intellectual property and the firm has provided insight into how and why already-produced creative goods or modular units of creative production are integrated with other complementary assets.[20] In contrast, in this Part, we explore how the production of the creative good itself is organized, and why it is organized that way. Property-rights theory cannot answer those questions. But there are other theories of the firm, and the hierarchical creative-production teams we examine would all be considered firms under the economic theories of Professors Coase,[21] Williamson,[22] Alchian and Demsetz,[23] and Holmström,[24] and in colloquial and legal parlance.

In this Part, we (a) explore the limitations of property rights-theory, (b) show the value of team-production theories, and (c) apply that analysis to creative production.

A. The Limitations of Property-Rights Theory

In its simplest form, property-rights theory defines a firm as the collection of nonhuman assets that are commonly owned.[25] Integration occurs when two assets come under the same ownership. Ownership is defined as residual control. Residual control refers to the right to control all uses of the relevant asset.

Property-rights theory identifies common ownership as a partial solution to problems that arise when managers of assets must make relationship-specific investments. Imagine that asset A (managed by manager A) can be combined with asset B (managed by manager B) to create value. The combination of the two assets requires investments that are only valuable when the assets are combined. Once those relationship-specific investments

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20 See note 14.

21 See R.H. Coase, *The Nature of the Firm*, 4 Economica 386, 389 (1937).

22 See Oliver E. Williamson, *The Vertical Integration of Production: Market Failure Considerations*, 61 Am Econ Rev 112, 113–14 (1971).

23 See Armen A. Alchian and Harold Demsetz, *Production, Information Costs, and Economic Organization*, 62 Am Econ Rev 777, 785–95 (1972).

24 See Bengt Holmström, *Moral Hazard in Teams*, 13 Bell J Econ 324, 338–39 (1982).

25 See Bengt Holmström and John Roberts, *The Boundaries of the Firm Revisited*, 12 J Econ Persp 73, 77 (Fall 1998).

are made,[26] the assets are worth more together than they are in any other use. This allows one manager to threaten to withdraw opportunistically to appropriate value from the other. Anticipating this outcome, parties will not make optimal relationship-specific investments in the first place.[27]

Assuming that the parties cannot effectively contract to avoid this opportunistic holdup,[28] integration provides a partial solution. If manager A owns both assets A and B, she has residual control over the future allocation of the productive use of those assets. Because this ownership structure reduces manager B's withdrawal threat and corresponding ability to engage in opportunistic holdup, manager A will make closer-to-optimal relationship-specific investments. This is only a partial solution to suboptimal relationship-specific investment because manager B is still subject to manager A's withdrawal threat and may therefore still underinvest. Thus, we expect integration in favor of ownership by the manager whose investment decisions are more important to the value of the enterprise.[29]

Those who have analyzed intellectual property laws through the property-rights lens have identified the disclosure paradox as a main source of potential holdup.[30] Specifically, buyers of informational goods require disclosure before purchase so that they can value the things they are buying.[31] But in the absence of intellectual property rights, once the information is disclosed its value can be appropriated without purchase.[32] Contracting solutions such as confidentiality agreements can be difficult to enforce and are often incomplete.[33] Thus, the recipient of disclosure

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26 These relationship-specific investments can be in specializing assets to work together or training human capital—like the manager's expertise—to use the assets.

27 Not all withdrawal threats are bad. In some cases, when they are state contingent, withdrawal rights can be valuable substitutes for monitoring. See, for example, Douglas G. Baird and Anthony J. Casey, *No Exit? Withdrawal Rights and the Law of Corporate Reorganizations*, 113 Colum L Rev 1, 8–9 (2013).

28 Incomplete contracting is at the heart of property-rights theory and is well explored in the literature.

29 See note 14.

30 See, for example, Burk and McDonnell, 2007 U Ill L Rev at 584–85 (cited in note 14); Bar-Gill and Parchomovsky, 157 U Pa L Rev at 1653–54 (cited in note 14).

31 See Kenneth J. Arrow, *Economic Welfare and the Allocation of Resources for Invention*, in National Bureau of Economic Research, *The Rate and Direction of Inventive Activity: Economic and Social Factors* 609, 615 (UMI 1962).

32 See id.

33 See Robert P. Merges, *A Transactional View of Property Rights*, 20 Berkeley Tech L J 1477, 1497–98 (2005) (concluding that nondisclosure agreements "involve nontrivial

can withdraw from the relationship having appropriated valuable information. This is an incurable holdup threat.[34] Anticipating that holdup risk, sellers will suboptimally invest in developing the goods and not make any disclosure. The converse is also a holdup problem. If the buyer pays before disclosure, she has no way to verify that she is getting the valuable information she bargained for.[35] Anticipating this, the buyer will either demand disclosure before payment or not enter the market in the first place.

The property-rights model suggests this holdup risk can be reduced by vertical integration. When intellectual property rights are weak, buyers and sellers therefore integrate in order to reduce that risk. When intellectual property rights are strong, enforceable property rights substitute for integration as a solution to the holdup threat; that is, intellectual property rights are designed to solve the disclosure paradox.[36] The seller need not fear that disclosure will lead to misappropriation because a valid patent allows the seller to sue to stop the buyer's unauthorized use of the information.[37] With strong intellectual property rights, sellers face smaller holdup risks and are therefore less likely to integrate with buyers.[38]

It is worth pausing to note that the application of property-rights theory to intellectual property law focuses on the integration of assets that are complementary to the creative good.[39] It does not describe the integration of multiple inputs to the creative good itself. Consider a lab where inventions are developed and a factory where they are used in production. The property-rights integration question is whether the factory will integrate with the lab: Will the factory owner buy the lab, the lab owner buy the factory, or neither? But the property-rights analysis tells us nothing about the organization of the collaborative

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problems of proof" and that "[m]ost business people . . . know that even with a signed NDA, precontractual disclosures can be risky for the disclosing party").

34 See id.

35 And pricing the transaction is almost impossible. See id at 1480 (noting the difficulty in pricing a transaction where the rights are not known prior to the exchange); R.H. Coase, *The Federal Communications Commission*, 2 J L & Econ 1, 14 (1959).

36 See Arrow, *Economic Welfare* at 616–17 (cited in note 31).

37 See 35 USC § 271.

38 See Barnett, 84 S Cal L Rev at 808–11 (cited in note 14); Merges, *Intellectual Property Rights* at *17–19 (cited in note 14).

39 For work on the integration of complementary assets with creative inputs, see generally Caves, *Creative Industries* (cited in note 9).

production of the creative good itself. It does not answer the question of how the scientists working in the lab are organized.

A property-rights firm can arise only when ex ante allocation of ex post residual-control rights is possible.[40] The residual-control rights must be allocated before the parties make relationship-specific investments; otherwise, the firm cannot help solve the ex post holdup problem created by the relationship-specific investments. For the initial creative production, however, that ex ante allocation is not possible. Residual rights in the creative function of the mind cannot be transferred or integrated in the property-rights sense.[41] But the production of intellectual property, almost by definition, always has at least one input that is a product of the mind.[42] Holdup threats, therefore, can be reduced and controlled (if at all) only by contract or informal mechanisms like reputation.[43] For high-creativity intellectual production, parties cannot effectively commit in advance to any given allocation of ex post residual-control rights; neither property nor contractual mechanisms can effectively reduce the ability of the creative party to engage in opportunistic behavior by, for example, concealing the best high-creativity input and applying it to another use.[44] Thus, there is a fundamental problem of moral hazard. And it is a problem that prevents both complete contracting and integration (in the residual-control sense).

But even though integration cannot cure holdup in these scenarios, we do see firms. Creative inputs are controlled within

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40 See Merges, *Intellectual Property Rights* at *8–11 (cited in note 14).

41 See Robert Gibbons, *Four Formal(izable) Theories of the Firm?*, 58 J Econ Beh & Org 200, 205 (2005) (noting that the inalienability of control rights over human capital reduces the degree to which integration can reduce holdup and rent seeking: "inalienable control rights are staying put, by definition"); Holmström and Roberts, 12 J Econ Persp at 79 (cited in note 25) ("If, on the other hand, firms consist of more than one individual, then one has to ask how one should interpret the unobserved investments (in human capital) that cannot be transferred. . . . At present, the property-rights models are so stylized that they cannot answer these questions."). In Professor Coase's view, holdup and rent-seeking problems are not problems that integration is uniquely situated to address. R.H. Coase, *The Nature of the Firm: Influence*, 4 J L, Econ, & Org 33, 43 (1988). See also Coase, 4 Economica at 398–401 (cited in note 21).

42 See, for example, Gil and Spiller, *Organizational Implications of Creativity* at *2 (cited in note 9) (noting that creativity is an input over which there is often neither command and control nor an ability to incentivize with money: "High level creativity, in short, can only be fostered, it cannot be commanded").

43 Indeed, integration in these circumstances often increases rather than decreases holdup. See id at *5 ("[I]nternal production is subject to a serious hold-up hazard based upon the inherent informational asymmetry.").

44 See id (discussing the problem of concealing better ideas). See also Holmström and Roberts, 12 J Econ Persp at 75–79 (cited in note 25).

hierarchies. That control is achieved by contract, not by property ownership. Unlike the classic example of a coal mine owned by A and a power plant owned by B, where B has an idea in her head, there is no way for A to purchase the residual-control rights to that idea. If there are no complementary real assets, A can only try to bind or encourage B to produce the idea by contract. In some cases even that may be impossible. But where it is possible we often see employment contracts used to create hierarchical teams to produce these creative goods at the direction of a manager—that is to say, we see Coasean firms.[45] This is not to suggest that the property-rights theory has no place in this analysis. To the contrary, much of the production utilizing intellectual products is best analyzed through the property-rights lens. But the property-rights lens does not clarify the production of the creative good itself.

To use our opening example, the property-rights theory goes a long way to explain Warner's acquisition of Alloy, but not Alloy's own organization. This lack of an explanatory theory leaves several legal questions unexplored. For example, should Alloy alone own the copyright in the books it produces? Or should each author in the firm own an undivided share in the copyright? Who should have the right to produce works based on the original? To answer these types of questions, we must explore the creative production function at the heart of firms like Alloy.

B. Theories of Team Production

Postinvestment opportunistic holdup is not the only cost of collaborative production. Other forms of information asymmetry cause moral-hazard problems. Specifically, when (1) investment inputs are difficult to observe and (2) final output cannot be allocated to specific inputs, the input providers will have incentives to shirk or otherwise undersupply their inputs.[46] Because effort cannot be observed and output cannot be allocated, the input providers will share equally in the final output regardless of effort. This creates a classic free-rider problem. This differs from property-rights holdup and rent-seeking problems that the existing

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[45] Professor Coase viewed the firm not as ownership of residual control but rather as an organization where an entrepreneur (rather than the market) allocated resources. See Coase, 4 Economica at 389 (cited in note 21).

[46] See Gil and Spiller, *Organizational Implications of Creativity* at *4–5 (cited in note 9) (discussing the problem of concealing better ideas). See also Holmström and Roberts, 12 J Econ Persp at 75–79 (cited in note 25).

literature suggests firms are solving. In a pure rent-seeking theory, the costs arise from ex post haggling. In the property-rights analysis, the costs are incurred when parties ex ante underinvest in relationship-specific assets in anticipation of the ex post holdup. The team-production and moral-hazard theories require no ex ante investment decision and no ex post haggling. Rather, the costs arise because the input providers supply suboptimal collaborative effort.

This type of moral hazard is particularly problematic for team production where human-capital inputs are central to output. For simplicity, we will proceed with an example of production that uses only human-capital inputs. The property-rights theorists view the problems of this production as problems that are uniquely issues of market transactions.[47] The team-production theorists take a different view. The main theories suggest two potential ways that organization in a firm or hierarchy can solve this problem. The first is monitoring. The second is enforcement of ex post rewards and penalties.[48]

1. The monitoring manager.

Team production can provide a valuable monitoring mechanism when inputs are at least partially observable but not verifiable and not easily allocated to output. The classic example is two laborers jointly moving a box. Ex post, the specific effort of each individual laborer is difficult to verify and allocate. We can measure the movement of boxes. But that provides little information on the effort of each laborer.

A team leader (which will be a firm's manager) observing in real time can use imperfect signals to monitor and meter effort.[49] This is where hierarchical organization adds value. The manager can see how much each worker is sweating, how long her breaks are, and how quickly she moves to the next box. Another example can be found in sports. A basketball coach can observe

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47 Consider Klein, Crawford, and Alchian, 21 J L & Econ 297 (cited in note 4) ("The previous analysis has dealt with examples of physical capital. When specific human capital is involved, the opportunism problem is often more complex and, because of laws prohibiting slavery, the solution is generally some form of explicit or implicit contract rather than vertical integration.").

48 See Alchian and Demsetz, 62 Am Econ Rev at 778–81 (cited in note 23). Professor Holmström is skeptical of the monitoring role of the team leader and instead focuses on the reward and penalty role to reduce moral hazard. See Holmström, 13 Bell J Econ at 325–26 (cited in note 24). We suggest that both factors are playing a role.

49 See Alchian and Demsetz, 62 Am Econ Rev at 781–85 (cited in note 23).

the player's position, how fast she is running, and how high she is jumping. Based on these observations, the coach or manager can reward, penalize, or replace the player during the production.[50]

In this way, the team facilitates monitoring, quick adjustment of incentives, and reallocation of resources. The manager observes the clues to effort level and adjusts the organization of production accordingly. The manager serves as a hub for the various contractual relationships that go into a team production. The manager has contracts with each of the various input suppliers. Those contracts or relationships can be altered through bilateral negotiation between the manager and the single input provider. No multilateral relationship need exist between the separate input providers. The basketball players do not negotiate with each other about who will play point guard for the second half.

The manager will have the incentive to perform this monitoring by virtue of a grant of residual profit. Thus, it is critical to the success of this organization that the manager be the residual claimant, be able to observe (even if imperfectly) input behavior, and be the central party to input contracts.[51]

The value of this arrangement decreases as observability decreases. If there are no signals for the manager to observe or if the signals are poorly correlated with the underlying variable of interest, the manager's monitoring adds little value.

2. The enforcement manager.

Even without observability, organizing production in a firm can be valuable. Firms serve a second function even when inputs are both unobservable and unverifiable. Namely, a manager can enforce reward and penalty mechanisms that substitute for monitoring and provide incentives for optimal effort even where that effort cannot be known.[52] Thus, while two workers in a contractual relationship with each other will shirk, the manager's oversight reduces that moral hazard.

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[50] See id. See also Steven N.S. Cheung, *The Contractual Nature of the Firm*, 26 J L & Econ 1, 8 (1983) (noting an example in pre-Communist China where riverboat workers "agreed to the hiring of a monitor to whip them").

[51] See Alchian and Demsetz, 62 Am Econ Rev at 781–83 (cited in note 23).

[52] See Holmström, 13 Bell J Econ at 326–30 (cited in note 24). For a theory of how to achieve appropriate incentives for the manager, see Sandeep Baliga and Tomas Sjöström, *Contracting with Third Parties*, 1 Am Econ J: Microecon 75, 92–98 (Feb 2009); Raghuram G. Rajan and Luigi Zingales, *Power in a Theory of the Firm*, 113 Q J Econ 387, 391–424 (1998).

The penalty-reward function of the manager is somewhat analogous to proposals of government prizes in place of intellectual property rights. In that literature, some have suggested that a prize system would be preferable to property rights in encouraging creativity.[53] Here the point is more positive than normative: where property (and contract) rights are too weak to foster creativity, prizes will be an alternative mechanism. The fact that the prizes are provided by a firm rather than the government doesn't change the analysis. As noted below, both government- and firm-issued prizes might be at work. The government might give a prize to the firm for its development, and the firm would then allocate the benefits of those rights as prizes to the team members. The derivative-works right might be playing this role.[54]

To illustrate in a simplified form, consider a production method where output (y) is a function of two human-capital inputs (X_1 and X_2). The value of the output is not the sum of the value of separable inputs. Optimally—and to make the collaborative production worthwhile—that output will also be greater than the sum of the inputs. The inputs are unobservable and unverifiable. Thus

(1) $y = f(X_1,X_2)$

and

(2) $f(X_1,X_2) > X_1 + X_2$ (this is a distinctive characteristic of a valuable collaborative production)[55]

and

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[53] See Saul Levmore, *A Public Choice View of IP(rizes)* *6 (RSCAS Policy Paper, 2012), online at http://cadmus.eui.eu/bitstream/handle/1814/23982/RSCAS_PP_2012_10.pdf?sequence=1 (visited Nov 24, 2013).

[54] See notes 155–63 and accompanying text. It may seem odd to refer to a derivative-works right as a prize rather than a property right. It is both: it is a prize that takes the form of property right. But the key is that it is a right in a future product rather than a right in the existing product. It is not a property right in the initial product; it is a prize that is granted for the development of the initial product. You could imagine a system of copyright that gave the creator no property right in the initial creation but exclusive rights to develop derivative works.

[55] Strictly speaking, the condition for collaborative production is that $f(X_1,X_2)$ is not the sum of $X_1 + X_2$. Out of equilibrium, where parties are shirking $f(X_1,X_2)$ may be less than $X_1 + X_2$.

(3) X_1 and X_2 cannot be observed

and

(4) no portion of y can be allocated specifically to X_1 or X_2.[56]

Because the inputs cannot be observed or verified, each input provider has an incentive to shirk. For example,

$X_1 = 3$ or 1

and

$X_2 = 3$ or 1

if $(X_1,X_2) = (3,3)$ then $y = 7$

if $(X_1,X_2) = (3,1)$ or $(1,3)$ then $y = 4$

if $(X_1,X_2) = (1,1)$ then $y = 2$.

This results in a free-rider problem. If both X_1 and X_2 perform, they split 7 for a surplus of 1. Thus if they share payouts evenly, each gets a surplus of 0.5. If one fully performs and the other shirks, they split 4 for a total surplus of 0. If they share payouts equally, the full performer gets a surplus of -1 and the shirker gets a surplus of 1. If neither fully performs, they split 2 for a surplus of 0. Here, equal payouts result in each producer getting a surplus of 0. Neither input can know whether the other input will fully perform. In equilibrium, both will shirk.

To solve this problem, they might enter an agreement in which each will pay a penalty slightly greater than .5 if the output is less than 7. The penalty would be paid to an outsider or could simply be the destruction of the value.[57] If this penalty is

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[56] In some sense, the inability to allocate is a combination of unobservability and unverifiability.

[57] Because it is a penalty on the entire team, it cannot be traded among the input providers. That means that the team members must agree to either give money away or destroy it (that is, burn the money). An agreement to burn money will, of course, be difficult to enforce in a world where renegotiation is possible. The only way to make the penalty binding is to enlist a third-party enforcer or create a mechanism that automatically destroys the value.

enforced, they will both have the incentive to perform[58] even if no one could ever identify which individual was shirking.[59] This reduces the moral hazard and shirking that arise when the connection between inputs and outputs cannot be directly observed. But this penalty cannot be enforced by contract between the input providers. Because each party is worse off if she pays the penalty than if she does not, the parties will simply renegotiate rather than pay the penalty.[60] Ex post, the parties will mutually agree not to pay the penalty.[61]

The renegotiation problem can be solved where there is a manager who is entitled to the payment of the penalty. The manager serves the role of enforcing the penalty agreement. As should be evident, the manager must not be the provider of the inputs.[62]

3. Solving team-production problems.

By combining these two concepts (monitoring and enforcing penalties), a managed hierarchy can solve several problems that pervade team production (especially creative team production).

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58 In game theory terms, this penalty has transformed a prisoner's-dilemma problem into a stag-hunt problem. In pure theory, even with the penalty the stag-hunt problem has two equilibria: both perform or both shirk. But conditional upon entering the agreement in the first place, each party is likely to expect the other to perform since that is the only way to make the relationship valuable. In other words the "best" option of both performing creates a Schelling focal point. See generally Thomas C. Schelling, *The Strategy of Conflict* (Harvard 1981).

59 See Holmström, 13 Bell J Econ at 326–30 (cited in note 24).

60 The ability to renegotiate contracts is central to the holdup problem. For a discussion on the value of renegotiation-proof contracts (and how they might be achieved), see Richard Holden and Anup Malani, *Contracts versus Assets and the Boundary of the Firm* *16–17 (working paper, Jan 5, 2012), online at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1990550 (visited Nov 24, 2013).

61 For now we assume a one-time transaction rather than repeat play. Repeat play adds reputation mechanisms and the possibility of punishing and rewarding a party with the rights of future participation. See notes 66–67.

62 See Rajan and Zingales, 113 Q J Econ at 389–91 (cited in note 52); Holmström, 13 Bell J Econ at 327–28 (cited in note 24):

> The enforcement problem can be overcome only by bringing in a principal (or a party) who will assume the residual of the nonbudget balancing sharing rules. The principal will not renegotiate the contract if for some reason the proper level of output is not attained. Note that it is important that the principal not provide any (unobservable) productive inputs or else a free-rider problem remains.

For a theory of how to achieve appropriate incentives for the manager, see Baliga and Sjöström, 1 Am Econ J: Microecon at 93–98 (cited in note 52).

The literature identifies four factors that influence collaborative production:

(a) Observability: the ability to observe input effort as it is provided[63]
(b) Verifiability: the ability to verify the input effort to outsiders[64]
(c) Allocation of input to output: the ability to assign output value to specific inputs[65]
(d) Certainty: the ability to know ex ante the likely value of a potential output that can be produced with a certain level of inputs[66]

As any of these is factors is reduced, collaborative production becomes more challenging. In the extreme, when none of these is present, no firm (and no contract) can be created.[67]

If effort is completely observable, verifiable, and allocable, then a contract (perhaps a partnership arrangement) will be sufficient. But in true collaborative production, perfect allocation will rarely be possible. For our analysis here, we assume that allocation is always imperfect for creative team production.

If effort is completely verifiable (but not allocable) there might arise an independent-contractor relationship where one party hires another and pays her per effort. This is also unlikely to be the case for creative production because of the problems of observing and verifying mental effort.[68]

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63 Observability is often limited in creative production because of the informational asymmetry between manager and input provider. See Gil and Spiller, *Organizational Implications of Creativity* at *3–4 (cited in note 9).

64 Something could be observable by the parties but not verifiable ex post. With information asymmetry often comes both observation and verification problems. The monitor and the third party will find it difficult to know (observe) or prove (verify) the level of input effort. For example, a video game programmer who promised to give his best idea may then disclose her second-best idea instead. Id at *5. A director, though, may know that an actor has not devoted enough time to studying the script, even if it would be impossible to prove in court that the actor was inadequately prepared.

65 Collaborative production will often by nature lead to problems with allocation. The inability to observe and verify will also often be the cause of an inability to allocate.

66 Certainty is often limited for creative production because the product is by definition new. Thus, ex ante, there is an "infinite variety" of outputs and "nobody knows" exactly what the optimal output will be. Id at *3. See also Caves, *Creative Industries* at 6–7 (cited in note 9).

67 There may be substitutes such as reputation or repeated play that fill in for conditions (a), (b), or (d).

68 See Gil and Spiller, *Organizational Implications of Creativity* at *3 (cited in note 9).

If output is completely allocable but input is not observable, there might arise a contractual relationship with ex post bonuses based on the allocated output.

The interesting case for us then is where allocation and verifiability are impossible[69] and observability and certainty are imperfect at varying degrees.

Where there is some certainty but no observability, the team must function through penalties and rewards implemented by a manager who owns the residual claim and does not herself provide nonseparable inputs. Thus, in the box example, if effort is unobservable but it is known that five boxes will be moved in an hour if both workers fully perform, the manager need only impose a penalty on both workers if less than five boxes are moved in an hour (or a reward if five are moved).

As observability increases, the role of the manager as a monitor becomes more valuable. Thus, the manager need not impose ex post penalties or rewards but simply observe and punish lack of effort during the production process. In the next Section we show how the manager's role impacts the organization of creative production.

C. Creative Team Production

To demonstrate the usefulness of team production in explaining the organization of creative production, we focus on a production function where two (or more) creative inputs can be combined into a single creative output.

The two inputs create unique value only when collaboratively combined with the other. That is, they produce an output that is greater than the sum of their separate values (equations (1) and (2) above). Because all the inputs are creative, the value of the output of this creative-production process depends entirely on creative elements.

In many cases this will mean observability and verifiability (factors (a) and (b) above) are absent. The creative input is a product of human effort. But that effort is often difficult to observe, difficult to verify, and even difficult to allocate to precise amounts of output. As noted above, that creates moral hazard. Moreover, uncertainty will often be high for novel intellectual products. At the extreme, when the product is entirely creative, all four factors will be absent. With unobservable, unverifiable

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[69] Impossible is an extreme assumption for simplicity.

inputs unallocable to uncertain outcomes, no collaboration is possible. Thus, all else equal, the highest-creativity productions will tend to be done by individuals outside of firms and outside of teams. Of course all else is not equal. Certain creative productions will be impossible without collaboration. Thus, for example, we do not suggest that the most creative movies can or will be made by one individual with no assistance. The point is rather that the more creative a project (and holding all other considerations constant), the more costly collaboration will be. Sometimes those costs will make collaboration prohibitively expensive. Other times the collaboration will be too important to forego without abandoning the project altogether.[70]

In the Sections that follow, we first explore observability and then uncertainty and show how production of creative products moves from an individual outside a firm to a team within a firm.

1. The effects of unobservability on the organization of creative team production.

Imagine two authors who wish to collaborate to produce a highly creative book. The output of their efforts is a function of their inputs. In the monitoring role, a manager could observe the time the authors spend typing, sitting quietly awake (presumably thinking), sketching out ideas, or surfing the Internet. This monitoring will be imperfect. A manager might observe what she thinks is the author thinking, when in fact the author is daydreaming. A long coffee break might be exactly what the author needs for the optimal burst of thought when she returns to work. In this scenario, where the manager cannot adequately observe the authors' efforts, it will be very difficult to form a firm. And because of the problems of team production described above, it is unlikely that the two authors will be able to successfully collaborate.

Now suppose that there are signals that can be correlated to actual input, and that the signals cannot be mimicked or faked. In these circumstances, it will be possible for managers to serve a useful monitoring function, and it is more likely that a hierarchy or firm will be used to organize production. Note that the

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[70] The exact dynamics of the tradeoff are difficult to quantify. That being said, there is evidence suggesting that more creative movies will be made in smaller firms. See Gil and Spiller, *Organizational Implications of Creativity* at *9–12, 41 (cited in note 9).

increased observability—which is generally associated with the ability to write more complete contracts—leads here to an increase rather than a decrease in the likelihood of organization in a firm. The particular expertise of any given manager will be in better assessing the signals of actual input (and adjusting production accordingly) than other potential managers. The more accurate the manager is in observing clues of input, the higher output will be and the more value the manager will produce for herself.

This may explain why, for example, *The Sound and the Fury* and *The Great Gatsby* were written by individuals, while *Sweet Valley High* was written by a firm.[71] Because *The Sound and the Fury* owes so much of its value to its creative elements, it would have been near impossible to monitor a team of authors collaborating in its production. Suppose William Faulkner wanted to collaborate with F. Scott Fitzgerald to produce *The Sound and the Fury*. Before the book is written, no one could know what it should look like.[72] No manager could have observed whether Faulkner or Fitzgerald was doing what he ought to and there could be no reliable signals of whether the authors were appropriately describing the travails of the Compson family in Yoknapatawpha County.

By contrast, the genre fiction of *Sweet Valley High* was susceptible to team production. Although we would not go so far as to say that creativity was irrelevant to the books' success, we

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[71] We feel safe asserting that *The Sound and the Fury* and *The Great Gatsby* are higher in creativity than *Sweet Valley High*. Intriguingly, lists of the top 100 novels of the twentieth century include no coauthored books; the nonfiction lists typically include a handful of coauthored books. See, for example, *100 Best Nonfiction* (Modern Library 2013), online at http://www.modernlibrary.com/top-100/100-best-nonfiction (visited Nov 24, 2013) (including among the top 100 nonfiction books of the twentieth century William Strunk and E.B. White's *The Elements of Style*; Alfred North Whitehead and Bertrand Russell's *Principia Mathematica*; Bert Hoelldobler and Edward O. Wilson's *The Ants*; and Alex Haley and Malcolm X's *The Autobiography of Malcolm X*); *100 Best Novels* (Modern Library 2013), online at http://www.modernlibrary.com/top-100/100-best-novels (visited Nov 24, 2013) (including no coauthored works among the top 100 novels of the twentieth century). This anecdotally provides some support for the idea that as the relative importance of creativity decreases, the feasibility of collaborative production increases. Still, because these nonfiction teams were not hierarchical, they tell us little about our central inquiry. For a more rigorous test of the prediction about creativity in the context of hierarchical structure in the movie industry, see Gil and Spiller, *Organizational Implications of Creativity* at *41 (cited in note 9) (finding that an increased demand for creative films led to a significant decrease in internal studio production of films).

[72] Ex ante knowledge of what the product will be means that the product cannot, by definition, be creative. See note 10.

can at least say that they did not depend as heavily on their creative aspects for their value.[73] If a group of authors wanted to produce *Sweet Valley High*, a skilled manager might therefore have been able to observe whether any given author's contributions were adequate by observing the quantity of output and its adherence to a well-worn style, group of characters, and set of themes.

And that is precisely how the series was written. Francine Pascal, the creator of *Sweet Valley High*, led a team of half a dozen ghostwriters.[74] Pascal provided a "Bible" that described the series' "characters, place, time and so forth," as well as "a rambling, stream-of-consciousness outline" for any particular book.[75] Pascal could then evaluate each team member's work by comparing it to the Bible and outline.[76] The team ultimately managed to produce over five hundred books.[77] In short, as the degree of creativity required for the task decreases, we expect observability to increase, and the value (and likelihood) of a managed hierarchy within a firm to increase as well.

Monitoring and contract technology will also influence whether a hierarchy can add value. Although observability in the example above was a function of the degree of creativity required to produce the book, observability may also increase (holding creativity constant) with advances in technology. Even simple things like word-processing software incorporating "track changes" features may enhance a manager's ability to observe inputs. More advanced tools may increase observability even

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73 "'They are frozen in time,' [series creator Francine] Pascal said of her young heroines. 'They will never be anything but high-school juniors.' She laughed. 'I know a good thing when I see it.'" Elizabeth Mehren, *Publishing's Queen of the Teen Romance Finds Success with a Formula*, LA Times H1 (Apr 20, 1986).

74 See id.

75 Id.

76 See id ("The 'good writers,' Pascal said, 'stay close to what they are told to do,' churning out an average of one teen title every three months."). For the largely consistent perspective of one of the ghostwriters of the series, see Grace Bello, *How Your Sweet Valley High Gets Made* The Hairpin (Aug 8, 2012), online at http://thehairpin.com/2012/08/how-your-sweet-valley-high-gets-made (visited Nov 24, 2013) ("[T]he would-be writers[ ] would have to do a two-chapter sample, about 30 pages. [The editors] have to see that you can match the style and the tone and pull the heartstrings of anonymous 13-year-old girls across the country."); id ("Basically, what you're trying to do is emulate a consistent tone throughout the series.").

77 The main series produced almost two hundred books, and the various spin-offs—including *Sweet Valley Twins*, *The Unicorn Club*, and *Sweet Valley University*—added over two hundred more. See Wikipedia, *Sweet Valley High*, online at http://en.wikipedia.org/wiki/Sweet_Valley_High (visited Nov 24, 2013).

further. For example, one recent study identified unique brain activity that was associated with freestyle (improvised) rapping that was not associated with rehearsed rapping.[78] Another study using advanced data gathering and modeling techniques indicated that an orchestra performs better the more the musicians follow the conductor's lead, rather than the lead of other musicians.[79] The easier it is to monitor creative effort, the more valuable a firm becomes. The same is true as contract methods advance to create more effective monitoring or penalty-reward mechanisms.[80] As those increase, all else equal, more creative production will have the potential to be brought in house.[81]

This may explain why book-packaging firms started with *Sweet Valley High* and progressed to *Gossip Girl*,[82] and why Paper Lantern Lit has entered the market in an attempt to produce higher-creativity books in the same market space—improvements in monitoring or contractual technology have made it possible to bring increasingly creative work in house.[83] It may also explain why, on the other hand, the simplest children's books have long been written by hourly employees of publishing houses. In the case of simple children's books, the importance of

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78 See generally Siyuan Liu, et al, *Neural Correlates of Lyrical Improvisation: An fMRI Study of Freestyle Rap*, 2 Scientific Reports (Nov 15, 2012). This area of study is growing rapidly and several similar studies on brain monitoring suggest the ability to observe creative activity.

79 See generally Alessandro D'Ausilio, et al, *Leadership in Orchestra Emerges from the Causal Relationships of Movement Kinematics*, 7 PLOS ONE (2012), online at http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0035757 (visited Nov 24, 2013).

80 See Part I.C.2.

81 In the context of noncreative goods, some commentators have suggested that monitoring and contract technology will have the exact opposite effect. See George S. Geis, *Business Outsourcing and the Agency Cost Problem*, 82 Notre Dame L Rev 955, 958, 993–94 (2007). It is not clear that this will always be the case. As Professor Coase pointed out in his seminal article on these questions, technological advances can cut either way depending on the broader contexts. Coase, 4 Economica at 397 n 3 (cited in note 21) ("[M]ost inventions will change both the costs of organising and the costs of using the price mechanism. In such cases, whether the invention tends to make firms larger or smaller will depend on the relative effect on these two sets of costs.").

82 Alloy's predecessor was involved in the production of *Sweet Valley High*. See Bello, *How Your Sweet Valley High Gets Made* (cited in note 76).

83 We feel slightly less comfortable in our assertion that *Gossip Girl* is, in fact, more creative than *Sweet Valley High* than we do in our assertion that *The Sound and the Fury* and *The Great Gatsby* are more creative than *Sweet Valley High*. But at least the expansion in genre fiction and targeted audience of firm-authored books suggests that improved technology has led to an expansion of the work that can be effectively produced in a firm.

creativity is relatively low,[84] so monitoring is relatively straightforward and the benefits of a managed hierarchy easier to obtain.[85]

To summarize what we have explored so far, a hierarchy might add value when it is able to overcome the observability constraint. In these instances, the manager is a specialized monitor who can detect (if imperfectly) whether individual team members are shirking. The manager in this hierarchy is a centralized contractual agent who can renegotiate terms with particular inputs without necessitating renegotiation among all inputs. The manager should have the residual claim to the team's output so that she has the incentive to manage efficiently. For ease of exposition, we will refer to a firm organized along these lines as an Alchian and Demsetz firm, after the authors of the seminal article describing these organizations.

2. The effects of uncertainty on the organization of collaborative creative production.

If observability is limited, then the firm might play a role in reducing moral hazard through enforcement of penalties and rewards. Both authors must perform and not shirk for the book to do well. If one author shirks and the other performs, it will be mediocre. If both shirk, it will be bad. But the shirking is unobservable and unverifiable. There is a free-rider problem. With some payouts, the equilibrium will be that no one performs.

One solution would be for the authors to impose a penalty on each author if the book is not good. The penalty has to be given to a third party or the value must be destroyed. By imposing this penalty, no author can gain by shirking. In equilibrium, they will all perform. But the authors cannot credibly adopt this penalty mechanism because it will never be enforced. Ex post,

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[84] By simple children's books we mean genres like learning-to-read books that import plots from movies and other books. For example, books like *King Kong: Kong's Kingdom* or *The Dark Knight: Batman's Friends and Foes* adapt movie plots to short storylines for children. The authors are often hourly employees, and one author of such books indicated to us that there is very little creativity involved. She suggested that noncreative technical writing skills that she referred to as "craft" were more important and also more observable than creativity "particularly when you've been given the plot by the editor who hired you."

[85] If other factors favor firms over individuals (ease of obtaining financing or marketing, for example), the overall supply of outputs to the market will become more collaborative but potentially less creative.

they will agree to relieve each other of the penalty. Thus, no penalty can be enforced to increase the incentives to avoid shirking.

This is where the manager of a team hierarchy comes in. The manager administers the penalty.[86] Note that it is key that the manager is not also an author. If the manager is an author, then she has the same incentive to shirk and renegotiate penalties as any other author. This solution works independently of monitoring.

The above example assumes certainty. That is, it assumes that the metric for a "good" book can be set ex ante. Uncertainty reduces the effectiveness of the team manager in creating the proper incentives because it is unknown what the product will look like if all authors perform. A probabilistic penalty will be needed, but this introduces risk for those who do not shirk. The effectiveness of this penalty will thus depend on probability, risk aversion, and endowment constraints. Constrained or risk-averse authors will exit the relationship rather than risk paying the penalty even if they fully perform.[87]

It may be useful, in cases of significant (but not absolute) uncertainty with some endowment constraint, to have a reward or penalty that is tied in part to a future relationship and to the input provider's value to that future relationship.[88]

Assume that project 1 will open the door for a related project 2. *Batman Begins* makes *The Dark Knight* possible. Assume also that the input providers will benefit from being involved in project 2. They have made specific investments that carry over from project 1 to project 2 but not to other projects. Michael Caine and Christian Bale have achieved a level of chemistry as Alfred and Bruce Wayne that would be costly for them to recreate in any other roles. If the manager has the ability to permit or prohibit input participation in project 2, she can use that ability to create bonuses for success on project 1. That is, if project 1 has a certain level of success, the manager will keep the team together for the follow-up project.

To use the numbers from Part I.B.2 above, Caine is X_1 and Bale is X_2. Once again:

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86 The penalty can also be structured as a reward. See text accompanying note 53.

87 See Holmström, 13 Bell J Econ at 328–30 (cited in note 24). The problem becomes even more complicated as uncertainty increases—the high end of payouts could be completely unknowable and the intermediate values could be a continuous variable. See id.

88 See id ("In a dynamic context the punishment . . . can be interpreted as a threat to discontinue cooperation.").

$X_1 = 3$ or 1 and $X_2 = 3$ or 1

if $(X_1,X_2) = (3,3)$ then $y = 7$

if $(X_1,X_2) = (3,1)$ or $(1,3)$ then $y = 4$

if $(X_1,X_2) = (1,1)$ then $y = 2$.

They need a manager to impose a penalty if they produce less than 7. Now assume the extra value of working together on *The Dark Knight* as opposed to another movie like *The Prestige*[89] is greater than 1 (.5 each).[90] The threat of being excluded from *The Dark Knight* is a sufficient penalty to guarantee that they do not shirk on *Batman Begins*. If the outcome is below 7, the producers will have an incentive to push Bale and Caine out as long as any average team could be expected to have done as well. But in the end they won't have to because now Bale and Caine will offer to work on *The Dark Knight* for less than any other team to avoid the cost of lost chemistry.[91]

But if the negotiated discount is at least 1,[92] then shirking is off the equilibrium path. Knowing that if they shirk they will be penalized by negotiating away 1 or more to work on *The Dark Knight*, Bale and Caine will perform well in the first place. They will produce 7. They will be more valuable to the producers than any average team, they will be kept on for the sequel, and they will share in the surplus.[93]

This only works because the manager has the right to exclude them from project 2. If any other manager could produce

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89 *The Prestige* was a film released shortly after *Batman Begins* starring Christian Bale and Michael Caine. It too was directed by Christopher Nolan. See *The Prestige* (Touchstone Pictures 2006); *Batman Begins* (Warner Bros. 2005).

90 You could imagine that the 1 of effort that even a shirker puts in results in this chemistry worth something like 1.1 and is transferable to project 2 no matter the outcome.

91 This is what Professors Benjamin Klein, Robert Crawford, and Armen Alchian call an "appropriable quasi rent." See Klein, Crawford, and Alchian, 21 J L & Econ at 299 (cited in note 4). Here that quasi rent is serving a valuable binding role.

92 Depending on the bargaining positions, lost chemistry may need to be greater than 1 for this to work. The producers and the actors may split some fraction of it. See Ariel Rubinstein, *Perfect Equilibrium in a Bargaining Model*, 50 Econometrica 97, 99 (1982). But the point remains that if the penalty is at some minimum level, they will not shirk.

93 See id.

The Dark Knight there would be no penalty to Bale and Caine from being excluded, and they would not have any incentive to produce the right amount on project 1. They would go to a different studio with their chemistry intact and make *The Dark Knight* there. They would be worse off than if they could have bound themselves to the first studio and aligned their incentives.

This method of reward might be particularly useful in the context of creativity because it can provide a solution in some cases even when the target of 7 is unknowable until after the project is completed. Before the movie is made, the producers might have no way of gauging the market. But after release they might see more clearly that a performing team would produce 7 and a shirking team would produce 4 or less. But the studio has the incentive to keep Bale and Caine if they produce better than the average. And they have the right incentive to kick them out if they don't. Thus, Bale and Caine need not know the target number. All they need to know is that the producer will have some reasonable ex post sense of whether the team worked or not. The incentive of the parties with relation to project 2 becomes an enforcement mechanism for the penalty or reward on project 1. As we discuss below, this may be a primary unidentified value of the derivative-works right.

Some may worry that a successful team member will be too successful and gain holdup against the manager. If a team member performs at the very top and becomes indispensable to the sequel, she will be able to demand a large chunk of the surplus.[94] But this should not worry us because, in these circumstances, this mechanism becomes an information-forcing rule. The potential for holdup creates an incentive for especially skilled team input providers to seek team membership and to work hard once they are selected. To the extent that an input provider can make herself essential to the project, she will be rewarded with bargaining power. That essential nature will often manifest itself in value for the team. Because there is an information asymmetry between the manager and the input providers regarding the providers' skill levels, this mechanism can facilitate optimal team formation by ensuring that skilled input providers have reason to reveal themselves.

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[94] See id.

Television production may provide examples of this. When casting the first season of *The Sopranos*, the firm owns the right to the second season. If the first season hits a certain level of success, then a second season is likely to go forward. Of course, if the manager observes any one member slacking, she can expel her. But if effort is not observable, team success in season 1 may be a sufficient metric to justify reward of participation in season 2 for the entire team. On the opposite extreme, if one member makes herself essential to the project, she can acquire a share of the surplus the project created to keep her on board for the second season. Thus, James Gandolfini had the ability to holdup the firm. This could be viewed as the optimal outcome. Everyone who thinks he can be James Gandolfini has an incentive to try to do so. They may even agree to work for a lower initial salary. The reward is ex post in the form of a payment for the second season. If all cast members make themselves essential,[95] the project will do very well and they can, as a team, demand a surplus for subsequent seasons. Whole-cast contractual renegotiations for very successful TV shows—from *Friends* to *Modern Family*—might be an example of this.[96] The surplus only exists because (1) the actors created value and (2) the studios own the derivative-works rights.

An additional value of the firm in these contexts (consistent with Professor Williamson as well as Professors Alchian and Demsetz) is that James Gandolfini does not have to negotiate with the other cast members. This avoids costly haggling, empty-core problems, and the general risk of negotiation breakdown when essential players demand their reward.

Because the reward is in the form of a subsequent project and that project's value is based on the success of the initial project, the reward is tied (very roughly) to the input-output relationship even when uncertainty is very high.[97] This also makes it

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[95] These dynamics become more problematic if an actor becomes essential merely because the audience does not take well to switching actors. Shows and movies have frequently dealt with the death or exit of an actor by recasting a character or introducing a new character. Whether those switches hurt the shows is difficult to measure.

[96] See Bill Carter, *'Friends' Cast Bands Together to Demand a Salary Increase*, NY Times C18 (July 16, 1996); Dorothy Pomerantz, *'Modern Family' Cast Plays Hardball with Fox over Salary Negotiations*, Forbes (July 24, 2013), online at http://www.forbes.com/sites/dorothypomerantz/2012/07/24/modern-family-cast-plays-hardball-with-fox-over-salary-negotiations (visited Nov 24, 2013).

[97] This mechanism does not exacerbate the moral-hazard problem to the extent a profit-sharing arrangement would.

easier to break the budget-balancing constraint.[98] Extreme shirking is avoided by monitoring, moderate shirking might be avoided by the fear of being dispensable or the show being canceled, and high effort (at least where the input provider knows or believes she is high talent) can be encouraged by the carrot of getting a huge chunk of the surplus that may exist in project 2.[99]

Moreover, even if the parties had signed noncompete agreements or exclusivity contracts that bound the team, the reward of participation in season 2 is worth much less if other firms are creating alternative versions.[100] The reward of future

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[98] This is a key characteristic of the penalty-reward mechanism. See Holmström, 13 Bell J Econ at 330 (cited in note 24).

[99] Ted Danson's role on *Cheers* may be another example of this. As the highest paid television actor at the time, his decision to leave was the end of the show. See Bill Carter, *Why 'Cheers' Proved So Intoxicating*, NY Times H31 (May 9, 1993). In fact, he had become so essential to the show that syndication deals for the reruns contained a provision committing the stations to buy all episodes but only if Danson was in them. See id. This only works if a centralized player (the firm) owns the rights to project 2. If anyone can make the next season of *Cheers*, *The Sopranos*, or *Friends* or the next *Harry Potter* movie, the input providers will be threatening withdrawal and reconstituting casts in destructive ways. Ted Danson may enter a relationship with a different production company to produce a competing version of *Cheers*. Similarly, Jennifer Aniston may be contracting with one studio to produce the next season of *Friends* while Courteney Cox is negotiating with another. In turn, each cast member will be negotiating side contracts with the other cast members. Contracts between each team member will be necessary to get to equilibrium.

[100] By a quirk of disputed copyright ownership, a scenario like this played out in the production of the James Bond films *Thunderball* and *Never Say Never Again* and made negotiations with the various input providers difficult and costly. The initial screenplay for *Thunderball* had been written as a collaboration of at least three people (Ian Fleming, Kevin McClory, and Jack Whittingham). Fleming, without permission from his coauthors, then turned the screenplay into a novel (also called *Thunderball*). The other two authors sued and tried unsuccessfully to enjoin the publication of the novel. The other claims in the suit were settled with an agreement that Fleming would retain the rights in the novel but McClory would retain literary and film rights in the screenplay. The film *Thunderball* was based on a subsequent screenplay that was (at least in part) based on Fleming's novel. *Thunderball* (the film) was produced in 1965 by Eon Productions. McClory was included as a producer and credited under an agreement that he would not make another movie based on the first screenplay for ten years. In 1983, after Roger Moore had become Eon's James Bond star, McClory and an independent production company hired Sean Connery (who had long since retired from playing Bond for Eon) to star in *Never Say Never Again* (based on the initial screenplay of *Thunderball*). *Never Say Never Again* opened within months of Eon Productions's James Bond film *Octopussy* starring Roger Moore. McClory announced his intent to make other Bond movies through the 1990s and at one point Sony bought McClory's rights and announced its intent to make a new Bond franchise to compete with MGM. A lawsuit and settlement between Sony and MGM (but not McClory) followed. See *DanJaq LLC v Sony Corp*, 263 F3d 942, 947–50 (9th Cir 2001); Graham Rye, *Kevin McClory; Co-author of the 'Thunderball' Screenplay Who Sued Ian Fleming*, The Independent 50 (Dec 7, 2006). Sony also owned the rights (including film) to the first Bond book, *Casino Royale*, which it traded

participation is less effective when its value can be diluted by other firms appropriating the derivative value. This problem may not be large: if the team that makes season 1 is successful, it will have the competitive advantage in producing season 2 regardless of the property rights. But the rights to produce the second season provide greater certainty about the value of the reward the manager can offer. Alternatively, the firm's exclusive right to produce the second season might be viewed as a default rule that captures the benefits of team-wide noncompete agreements with reduced transaction costs. This focus on the reward value of the rights in project 2 may form the basis for a theory of copyright law's derivative-works right. We explore this and other intellectual property rules through the team-production lens in the next Part.[101]

Before doing so, though, we pause to summarize the key features of these organizations. While in the Alchian and Demsetz firm the manager adds value primarily by acting as a specialized monitor, here the manager adds value by enforcing penalties or doling out rewards. Those penalties and rewards are triggered by whether the team's output meets some threshold. The key skill for the manager here is in properly setting expectations that trigger penalties or rewards. The manager is again the centralized contractual agent—this avoids the possibility of renegotiation among input providers that would otherwise undermine the efficacy of the penalty mechanism. For this reason, the manager should not be a provider of inseparable inputs; otherwise, she too would have an incentive to renegotiate. For expository convenience, we will refer to firms that operate to overcome uncertainty by setting appropriate expectations as Holmström firms, after the author of the seminal article describing these organizations.[102]

II. IMPLICATIONS FOR INTELLECTUAL PROPERTY LAW

What does this analysis mean for intellectual property law? Or, to ask the same question from the other direction, how does intellectual property law facilitate or impede the optimal organization of creative production?

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to MGM as part of settlement. See Janet Sphrintz, *Big Bond-Holder*, Variety (Mar 29, 1999), online at http://variety.com/1999/film/news/big-bond-holder-1117492814 (visited Nov 24, 2013).

101 See Part II.

102 See generally Holmström, 13 Bell J Econ 324 (cited in note 24).

Two kinds of intellectual property rules are especially important here: allocation rules and scope rules. Allocation rules determine to whom the initial grant of intellectual property goes. Scope rules determine what exactly the owner of the intellectual property gets. In the discussion that follows, we will focus on copyright law and the creative goods it regulates, but the analysis here likely applies to intellectual property more generally because (1) collaborative creative production occurs across all fields regulated by intellectual property, and (2) scope and allocation rules are endemic to all intellectual property law. We leave for another day a complete exploration of how the team-production theories we emphasize affect the technology-oriented industries (and, by extension, patent law).[103]

A. Allocation of Rights

As noted above, firms or managed hierarchies arise in large part because it is difficult to allocate inputs to outputs. If it were easy to do so, then parties could simply write contracts that tied an input's rewards to its output. In designing an intellectual property regime sensitive to the problems identified by theorists of the firm, we should therefore aim to distinguish works created under conditions in which it is easy to allocate inputs to outputs from those created under conditions in which it is difficult to so allocate. And the structure of ownership—how many copyrights vest in a work and in whom do those rights vest—ought to be sensitive to the conditions in which the work was created.

While copyright law in some instances applies different allocation rules depending on whether a scenario poses team-production problems, the corresponding ownership structure does not line up well with the prescriptions of the team-production theories. As a result, we make some suggestions for how copyright law might build upon its foundation to better support collaborative creative production.[104]

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[103] See Robert P. Merges, *The Law and Economics of Employee Inventions*, 13 Harv J L & Tech 1, 20–26 (1999) (describing how team-production problems may arise in technology-oriented industries, and identifying evidence indicating the pervasiveness of these problems).

[104] We assume that facilitating efficient collaboration is a valuable outcome. There may be normative objections to this. The analysis is still relevant; it just provides insights on what to avoid if the goal is to discourage collaborative creation. And of course, copyright law has many other goals unrelated to the formation of collaborative teams, and perhaps some goals that conflict with that formation. We focus here on the new light

1. Authorship: distinguishing among modes of production.

To devise sensible allocation rules, copyright law must be attentive to the conditions under which a work is created. Some might raise no team-production problems; others might raise serious ones. As described below, copyright law relies on both the number of creative inputs and the nature of the outputs in distinguishing among works.

a) Ordinary works. Perhaps the easiest case for allocating inputs to outputs is when a single person works alone to produce a creative work. Think here of a Picasso or Pollock painting. In these instances, all of the value of the creative work is due to the effort of the painter, working alone. At least as a first cut, then, the painter should be the sole owner of the copyright.

And that's how copyright law works. Ordinarily, copyright vests initially in the author—that is, the person who first fixes an original idea in a tangible medium of expression.[105] When a person comes up with an idea and turns it into something that other people can experience, she is the author and owns the copyright in her product.

Even this simple case, though, is perhaps a bit more complicated. All artists are, to greater and lesser degrees, products of their influences—there are few, if any, sui generis producers of creative works. In extreme instances, a producer of a work might owe such a heavy debt to previous works that she ceases to be a single person working alone to produce a creative work; instead, the work had been produced by those who came before.[106] In such instances, the producer should not own the copyright.

Something like this may explain *L. Batlin & Son, Inc v Snyder*.[107] Toy piggy banks made of metal and featuring a figure of Uncle Sam had been sold since the late 1880s.[108] Jeffrey Snyder registered a copyright for an Uncle Sam bank that was made of plastic.[109] Snyder's bank was based on the well-known

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that the team-production view sheds on copyright law. Integration with other aims of copyright law is a larger future project.

[105] See 17 USC § 201(a); *Community for Creative Non-Violence v Reid*, 490 US 730, 737 (1989).

[106] There are also instances in which a producer might be thought to be collaborating with those who came before. Those instances are within the purview of the derivative-works doctrine. See Part II.B.

[107] 536 F2d 486 (2d Cir 1976).

[108] See id at 488.

[109] See id.

metal versions, and contained a few modifications to account for differences in the manufacturing process required by the use of plastic instead of metal.[110] The court rejected Snyder's effort to enforce his copyright, reasoning that, in producing the plastic Uncle Sam bank, Snyder did not make "an original contribution not present in the underlying" metal Uncle Sam bank.[111] In other words, whatever creative input existed in the plastic Uncle Sam bank could be found in the original metal Uncle Sam bank. Snyder may have made technical contributions to convert the existing metal Uncle Sam banks into a plastic one.[112] But because copyright law focuses squarely on creative inputs,[113] it would not govern the allocation of Snyder's input to the output here, even if other legal regimes might.[114]

In the mainstream case, though, we may think of a producer acting alone as a sole author notwithstanding the influences of prior works. David Foster Wallace owed at least some portion of his achievements to the influences of Thomas Pynchon and Don DeLillo, among others. But because Wallace's contribution to *Infinite Jest* was so much greater than that of anyone else, it nonetheless seems right to say that Wallace was a single person working alone to produce that novel, and we can best allocate outputs to inputs by granting Wallace—and only Wallace—a copyright in *Infinite Jest*.[115]

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110 See id.

111 *L. Batlin & Son*, 536 F2d at 491 (quotation marks and citation omitted).

112 See id at 488.

113 See *Feist Publications, Inc v Rural Telephone Service Co*, 499 US 340, 345 (1991) (holding that the Constitution requires that a work incorporate at least a minimal degree of creativity in order to obtain copyright protection).

114 In *L. Batlin & Son*, the putative author did not contribute enough of his own creative input to merit a copyright. Where the putative author does contribute enough of her own creative input to merit a copyright, but also owes a particularly heavy burden to a prior copyrighted work, team-production problems may arise. This is because it is hard to allocate the output—the later work—to the two creative inputs—the author of the original work and the author of the later work. In these instances, the derivative-works doctrine may facilitate the organization of team-production firms. See Part II.B.

115 This view of a single author is consistent with the Western idea of "the romantic author." It can and has been criticized for ignoring communal collaboration, generational collaboration, and the general cultural inputs to creation. Because American copyright law is largely based on the Western idea of the romantic author, we focus on that concept here. But there is much more work to be done in thinking about these theories through broader concepts of authorship. For now, it is worth noting that many of the features in copyright law that we identify as hindering collaboration are the exact features that derive from the narrow western view. These limit the scope of copyright's domain. Thus, our suggestion below that we move away from "authorship" as the defining characteristic of copyrights will also facilitate a more comprehensive treatment of works that do not fit into this western view of the romantic author. See generally, Peter Jaszi, *Toward a*

b) Collective works. Now suppose a work owes its origin to more than one creative input. Even in these situations, it might sometimes be easy to distinguish the contributions of each input. If so, team-production problems would not arise.

These are what copyright calls collective works.[116] When the outputs of several inputs "constitut[e] separate and independent works in themselves,"[117] it is possible to allocate inputs to outputs, and copyright law therefore endows each piece with a distinct copyright. There is a copyright in each contribution and a separate copyright in the collective work as a whole.[118] The copyright for each contribution vests in the author of that contribution, and the copyright in the collective work as a whole vests in the person who selected and arranged the collective work as a whole.[119] The copyright in a given work that is part of a collective work can earn royalties separate from the others, can be adapted into other formats separately from the others, and can be reproduced without regard to the other inputs (or their interests). This makes it easier for each input provider to obtain rewards calibrated to her output.

c) Joint works. Still, there will be situations in which it will be difficult to distinguish the contributions of each input to the creative work. In such cases, team-production problems may arise.

Copyright law has a category that appears to fit this case well. It is called a joint work: "A work prepared by two or more authors with the intention that their contributions be merged

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Theory of Copyright: The Metamorphoses of "Authorship", 1991 Duke L J 455; Daniela Simone, *Dreaming Authorship: Copyright Law and the Protection of Indigenous Cultural Expression* (unpublished draft) (on file with authors); Megan M. Carpenter, *Intellectual Property Law and Indigenous Peoples: Adapting Copyright Law to the Needs of a Global Community*, 7 Yale Hum Rts & Dev L J 51 (2004); Lucy M. Moran, *Intellectual Property Law Protection for Traditional and Sacred "Folklife Expressions"—Will Remedies Become Available to Cultural Authors and Communities?*, 6 U Balt Intell Prop L J 99 (1998); Daniel J. Gervais, *Spiritual but Not Intellectual? The Protection of Sacred Intangible Traditional Knowledge*, 11 Cardozo J Intl & Comp L 467 (2003); Shun-ling Chen, *Collaborative Authorship: From Folklore to the Wikiborg*, 2011 U Ill J L Tech & Pol 131. See also Paul Kuruk, *Protecting Folklore under Modern Intellectual Property Regimes: A Reappraisal of the Tensions between Individual and Communal Rights in Africa and the United States*, 48 Am U L Rev 769, 795–96 (1999).

116 A collective work is "a work, such as a periodical issue, anthology, or encyclopedia, in which a number of contributions, constituting separate and independent works in themselves, are assembled into a collective whole." 17 USC § 101.

117 See 17 USC § 101.

118 See 17 USC § 201(c).

119 See 17 USC § 101(c).

into inseparable or interdependent parts of a unitary whole."[120] The joint work gets a single copyright, and each author of a joint work owns an equal share in the whole.[121]

It is difficult, if not impossible, to allocate inputs to outputs when the inputs are "inseparable or interdependent parts" and the output is "a unitary whole."[122] The team-production theory tells us these kinds of works are different from those for which the inputs are separate and independent and the output is not a unitary whole. The production of these kinds of works is best organized when the team's output results in a single modular property right. And that is how copyright law responds to these works.

The law does not attempt to delineate distinct property rights in the output of each individual team member. Because team production is characterized by output that can be greater than the sum of the inputs, and because it is difficult to allocate output to inputs, any effort to so delineate rights by a team member would be prohibitively costly.[123] If copyright law tried to create distinct property rights in each team member's input into a joint work, the team could try to respond by contractually bundling their disparate property rights into a single structure. But problems of verifiability would likely stymie any such efforts—it would be impossible for the team members to enforce contracts mandating particular contributions by individual team members.

On the team-production view, then, copyright law does well to distinguish between works created by a single person acting alone (ordinary works), works created by a group of people acting independently (collective works), and works created by a group of people acting together (joint works). Only the last of these poses team-production problems. On the whole, we expect

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120 17 USC § 101.

121 When there are two authors, each owns 50 percent of the whole; when there are three, each owns 33.3 percent. Each author may exploit the work herself or grant a nonexclusive license without the consent of the others, although complications arise regarding exclusive licenses. Compare *Sybersound Records, Inc v UAV Corp*, 517 F3d 1137, 1144–46 (9th Cir 2008) (concluding that authors of joint works may transfer nonexclusive licenses, but not exclusive ones), with Melville B. Nimmer and David Nimmer, *Nimmer on Copyright* § 6.10 (Lexis 2012) (disagreeing with *Sybersound* and arguing that, at least for purposes of standing to sue, a transferee of a license from a joint author may be considered exclusive). Joint authors have a duty to account to other joint authors.

122 17 USC § 101.

123 See Henry E. Smith, *Intellectual Property as Property: Delineating Entitlements in Information*, 116 Yale L J 1742, 1759 (2007).

that ordinary works and collective works will be produced by organizations that do not resemble team-production firms; joint works, however, will be produced by organizations that do resemble such firms.

i) Identifying authors of a joint work. By avoiding the delineation process for joint works and instead combining all "inseparable or interdependent parts" into a single ownership bundle, copyright law therefore takes a step to facilitate the organization of creative collaborative production. But the facilitation is incomplete. The joint-works concept does nothing to facilitate organization in a hierarchy or promote the roles of a manager that are valuable to creative production. Although the law correctly recognizes the problem of identifying authorship, the solution does nothing to facilitate efficient ownership and control.

As an example of the flaws in copyright's treatment of joint works, consider *Aalmuhammed v Lee*.[124] Jefri Aalmuhammed had previously written, directed, and produced a documentary about Malcolm X.[125] Denzel Washington was starring in Spike Lee's film *Malcolm X*, which was being produced by Warner Bros.[126] Washington asked Aalmuhammed to help him prepare for the part.[127] Aalmuhammed's role expanded, though, and he eventually made "independently copyrightable" contributions to the film, including writing scenes that made it to the finished version.[128] After the film's box office success, Aalmuhammed

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[124] 202 F3d 1227 (9th Cir 2000). This is not an isolated case. For similar examples, see generally *Richlin v Metro-Goldwyn-Mayer Pictures, Inc*, 531 F3d 962 (9th Cir 2008) (analyzing a copyright dispute involving the *Pink Panther* film franchise); *Davis v Blige*, 505 F3d 90 (2d Cir 2007) (analyzing a copyright dispute involving Mary J. Blige's songs "LOVE" and "Keep It Moving"); *Gaiman v McFarlane*, 360 F3d 644 (7th Cir 2004) (analyzing a copyright dispute involving the comic book series *Spawn*); *Thomson v Larson*, 147 F3d 195 (2d Cir 1998) (analyzing a copyright dispute involving the play *Rent*).

[125] *Aalmuhammed*, 202 F3d at 1229.

[126] Id.

[127] Id.

[128] Id at 1229–32. Aalmuhammed also did several other things that undoubtedly wouldn't suffice to support his claim of authorship. See id at 1231 (noting, for example, that Aalmuhammed spoke in Arabic to people working at a mosque at which the movie was filming). One might also contend that because Aalmuhammed's contributions were primarily aimed at ensuring factual accuracy, they might not be extended much, if any, copyright protection. See, for example, *Harper & Row, Publishers, Inc v Nation Enterprises*, 471 US 539, 547 (1985). But the court nonetheless concluded that Aalmuhammed made an independently copyrightable contribution with at least some of his work on the film, so neither of these arguments was a sufficient basis on which to deny his claim of joint authorship.

sued, seeking a declaration that he was a joint author of the film.[129]

The court rejected Aalmuhammed's claim to authorship. Even though he had made an independently copyrightable contribution, and "[a]ll persons involved intended that Aalmuhammed's contributions would be merged into interdependent parts of the movie as a unitary whole," the court nonetheless concluded that Aalmuhammed was not an "author" within the meaning of the statutory definition of a joint work—even though copyright requires only that a putative author demonstrate a minimal degree of originality in her work in order to obtain a copyright.[130] In this context, too "many people might qualify as an 'author' if the question were limited to whether they made a substantial creative contribution."[131] So, instead, the *Aalmuhammed* court applied a three-part test requiring (1) that the putative author exercise control over the work, (2) that there be "objective manifestations of a shared intent to be coauthors," and (3) that the "audience appeal of the work turn[ ] on both contributions and 'the share of each in its success cannot be appraised.'"[132]

Aalmuhammed's claim failed largely because he "lacked control."[133] Although Aalmuhammed made helpful contributions, "Spike Lee was not bound to accept any of them, and the work would not benefit in the slightest unless Spike Lee chose to accept them. Aalmuhammed [therefore] lacked control over the work, and absence of control is strong evidence of the absence of coauthorship."[134]

But the team-production theory tells us that this argument proves too much. No one could satisfy the control requirement—

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129 See *Aalmuhammed*, 202 F3d at 1230.

130 Id at 1232. See also *Feist Publications*, 499 US at 345.

131 *Aalmuhammed*, 202 F3d at 1233.

132 Id at 1234.

133 Id at 1235. The court relied principally on *Burrow-Giles Lithographic Co v Sarony*, in which the Supreme Court held that the term "author" in the Constitution's Intellectual Property Clause encompassed those to whom a work "owes its [origin]." 111 US 53, 57–58 (1884) (holding that a photographer could claim a copyright in a photograph). *Burrow-Giles* thus sets only a minimal constitutional hurdle over which putative authors must jump in order to obtain a copyright. Because the Ninth Circuit (correctly) recognized that Aalmuhammed had made an independently copyrightable contribution to the work—and had therefore made it over the low constitutional bar—*Burrow-Giles* cannot support the court's conclusion that Aalmuhammed had failed to meet some higher statutory bar deriving from the definition of a joint work.

134 *Aalmuhammed*, 202 F3d at 1235.

not even Lee. The problem is in the court's insistence that the author have "control over the work."[135] As our analysis above indicates, no creative input has (or even can have) control over the work as a whole.[136] Problems of observability, verifiability, allocation, and uncertainty prevent such control over an individual input.[137] To greater and lesser degrees in particular instances, creative inputs to a collaborative process cannot be compelled to do particular things; this is what gives rise to the team-production problem.

Taking the *Aalmuhammed* court's example of a clear case of joint authorship,[138] Gilbert could no more compel Sullivan to write the best music for his lyrics than Aalmuhammed could compel Lee to integrate his revisions to the script. And even if Gilbert had the contractual right to compel Sullivan to compose music for lyrics that Gilbert wrote, he could not control the creative aspects of that composition. Similarly, no enforceable contract could obligate Lee to dedicate the same degree of creative skill and effort to directing scenes written by Aalmuhammed as scenes written by Lee. But that does not mean that neither Gilbert and Sullivan nor Aalmuhammed and Lee qualify as authors of joint works.[139]

The better approach is simply to determine whether a putative author was a creative input making "inseparable or interdependent" contributions to a "unitary whole." That is what the statute commands,[140] and it describes precisely the role of a member of a team-production firm.

ii) Ownership structure of joint works. The decision in *Aalmuhammed* was ultimately not driven by a concern about who

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135 Id.

136 See Part II.A.1.

137 See, for example, *Aalmuhammed*, 202 F3d at 1235. Indeed, for this reason, it's doubtful that even Lee had "control over the work" in this sense. After all, he could no more compel Washington to perform in a certain way than Aalmuhammed could compel Lee to film the scenes Aalmuhammed wrote. See *Easter Seal Society for Crippled Children and Adults of Louisiana, Inc v Playboy Enterprises*, 815 F2d 323, 337 (5th Cir 1987) (noting that the contributing "authors" to a motion picture include the actors, among others).

138 See *Aalmuhammed*, 202 F3d at 1232.

139 See id.

140 See 17 USC § 101. The statute also requires that the parties have intent to merge their contributions. The "coauthors [must] make objective manifestations of a shared intent to be coauthors." *Aalmuhammed*, 202 F3d at 1234. This requirement seems justified largely to prevent participants in a collaborative production from divesting each other of authorship status by secretly intending not to merge. In any event, the intent requirement is tangential to our concerns here.

might qualify as an author. The court recognized that the definition of an author (at least in the film context) might encompass producers, directors, editors, cinematographers, actors, or animators.[141]

The court's worry was, instead and rightly, about ownership. All other participants had signed work-for-hire agreements with Warner Bros.; if Aalmuhammed had prevailed on his joint-authorship claim, he would have held a 50 percent share in *Malcolm X*, with Warner Bros. owning the other 50 percent. The court's effort to avoid that plainly misguided result led it to deny Aalmuhammed his (plausibly correct) claim to joint authorship.

For our purposes, though, this merely demonstrates that the ownership structure that copyright law applies to a joint work is inappropriate. The key is that authorship should be a distinct concept from ownership and control. The team-production theories tell us that ownership in the team's output should not be equally distributed among the several creative inputs (the authors). Instead, ownership of the work (and, through it, possession of the residual claim) ought to vest in the team's manager.[142] The joint-work doctrine gives us no tools by which to do so. Managers might not be making creative contributions to a work; joint authors must make such contributions.[143] Instead, we must turn to another allocation rule that frequently arises in joint-authorship cases: the work-made-for-hire doctrine.

2. Author-owned works and works made for hire.

The work-made-for-hire doctrine could be used to place copyrights in the hands of a valuable team manager. But courts now invoke the doctrine based on factors that are not tied to the value that a manager can add. As a result, the doctrine's potential for facilitating collaborative creativity has been left untapped.

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[141] See *Aalmuhammed*, 202 F3d at 1232.

[142] Of course there may be some instances where, notwithstanding the high level of collaborative creativity, the parties enter a partnership. We predict that those relationships will be more likely to occur where other factors—like reputation and repeat play—are constraining moral hazard. We would also expect that those agreements will have little contractual specification. See, for example, *Gaiman*, 360 F3d at 649–50. We would also expect them to be fragile and subject to failure if the reputational constraints are not as strong as expected. Id.

[143] It is unclear whether those contributions must be independently copyrightable. Compare *Aalmuhammed*, 202 F3d at 1231, with *Gaiman*, 360 F3d at 658–59.

The default rule is that copyright ownership vests initially in the author of a work.[144] This simple rule works well when there is only one author. If there is only one input to a creative work, then we can provide rewards commensurate with production simply by granting that input exclusive rights in the output. This is because the value of those exclusive rights depends (almost) entirely on the value contributed by the input.[145] It also works well when there are multiple inputs making separable and independent contributions to a larger work. Each contribution can be distinguished from the others at reasonable cost, and the value of the exclusive rights associated with each contribution will depend (almost) entirely on the value contributed by each input. These two cases—the sole author and the collective work—do not present the team-production problems with which we are primarily concerned.

When there are several inputs making "inseparable and interdependent contributions" to a "unitary whole," it is more difficult to establish an appropriate ownership structure.[146] This is the team-production scenario, and it is what copyright law calls a joint work. Creative team production is optimized in a structure containing a manager who observes (in the Alchian and Demsetz view) or a manager who can reward or punish (in the Holmström view). In some instances, these roles may be divided between two managers. On a sports team, you might have an owner or general manager who enforces rewards and penalties and a coach who monitors. In a film production, the monitoring may be done by a director, while an executive producer or studio head might enforce rewards and penalties.

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144 See 17 USC § 201(a). "As a general rule, the author is the party who actually creates the work, that is, the person who translates an idea into a fixed, tangible expression entitled to copyright protection." *Community for Creative Non-Violence*, 490 US at 737.

145 We say almost because there are surely factors independent of the author that affect the value of a creative work. For an intriguing example of the social factors affecting the commercial success of a creative work, see Cass R. Sunstein, *How Social Dynamics Made You Successful*, Bloomberg View (Bloomberg Sept 25, 2012), online at http://www.bloomberg.com/news/2012-09-25/sugar-man-s-lesson-for-markets-and-politicians.html (visited Nov 24, 2013). In part because the value of a creative work is not due exclusively to the efforts of the sole author, copyright's regime of exclusive rights is limited by doctrines like fair use and the idea-expression dichotomy. These limits mediate the relationship between the author and society in general, though, and are therefore not immediately relevant to our discussion, which concerns the relationship among multiple authors.

146 17 USC § 101.

Copyright's default ownership rule for joint works creates a single bundle of exclusive rights in which each input owns an equal share. But this ownership default is an impediment to the formation of team-production firms because it conflicts with the role of the manager who may not be an author of a joint work. When she is not an author of the joint work, the manager cannot (under the default rule) own the exclusive rights to the team's output and, by extension, the residual claim on the team's output.

Copyright law, though, offers a plausible solution: the work-made-for-hire doctrine. That doctrine vests ownership initially in someone other than a creative input if either of two conditions is met. The first condition is that the creative input to the work is an employee working within the scope of her employment.[147] The second condition is that the work falls within a set of statutorily identified works and that the inputs sign written agreements agreeing that the work is "for hire."[148]

The contractual mechanism is unlikely to effectively facilitate collaborative creative production. As a practical matter, *Aalmuhammed* and cases like it indicate that contractual failure is possible even in sophisticated creative organizations.[149] As a theoretical matter, moreover, the contractual mechanism is unattractive because it creates a risk of opportunism. Suppose that two authors and a manager agree that the two authors will jointly produce a work and, upon completion, assign it to the manager. In return, the manager retains the residual claim to their joint output. If it turns out that the work is more valuable than expected, such that the residual claim is worth more than the authors anticipated, they will try to escape the agreement so

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147 See 17 USC § 201(b) ("[T]he employer or other person for whom the work was prepared is considered the author for purposes of this title, and, unless the parties have expressly agreed otherwise in a written instrument signed by them, owns all of the rights comprised in the copyright.").

148 See 17 USC § 101:

> [A] work specially ordered or commissioned for use as a contribution to a collective work, as a part of a motion picture or other audiovisual work, as a translation, as a supplementary work, as a compilation, as an instructional text, as a test, as answer material for a test, or as an atlas.

Notably, the list includes motion pictures and excludes sound recordings.

149 See for example, *Richlin*, 531 F3d at 967–70 (analyzing a copyright dispute involving the *Pink Panther* film franchise); *Davis*, 505 F3d at 97–101 (analyzing a copyright dispute involving Mary J. Blige's songs "LOVE" and "Keep It Moving"); *Gaiman*, 360 F3d at 650–55 (analyzing a copyright dispute involving the comic book series *Spawn*); *Thomson*, 147 F3d at 199–205 (analyzing a copyright dispute involving the play *Rent*).

that they can split the residual claim. One simple way to do so would be to deliver to the manager another work of lower value. The only way to avoid this would be for the manager to have written a contract that, before the work was created, specified with sufficient detail what precisely the authors would deliver.[150] But because the work is the product of a creative process involving novel elements residing in the minds of the authors, it would be prohibitively costly to delineate in advance the contours of the work that the authors commit to assign.[151] Managers would be reluctant to take on the monitor's role.

The noncontractual mechanism—which applies a special ownership structure to a work created by an employee within the scope of employment—is more promising. In these scenarios, the hiring party is deemed the author despite the fact that the hiring party has not made a creative contribution to the work. Ownership vests initially and only in the hiring party, and this is true regardless of how many employees contributed. On the surface, then, this mechanism may facilitate the formation of team-production firms because its ownership structure—the vesting of a single residual claim in a manager who is not necessarily providing inseparable inputs to the team's output—matches that required for a team-production firm. It appears that the doctrine applies precisely when a team exists—that is, when there is a manager at the top of the creative hierarchy.

As courts have implemented it, though, the noncontractual work-made-for-hire mechanism does not line up well with the structure of the team-production hierarchy that we have been examining. For a work to default to this ownership structure, it is not enough for there to be a manager. Rather, there must be a specific employer-employee relationship and the work must be created within the scope of that relationship.[152] This inquiry is in turn guided not by any theories of production but by the general common law of agency. Under that law, the courts' focus in determining whether the relationship is employer-employee is on

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150 As this analysis might suggest, the manager might try to eliminate this opportunistic behavior by demanding the rights to all of the authors' output. This possibility forms the basis for the employer-employee work-made-for-hire relationship discussed below.

151 See Smith, 116 Yale L J at 1759 (cited in note 123); Clarisa Long, *Information Costs in Patent and Copyright*, 90 Va L Rev 465, 484–85 (2004).

152 Or if, as noted, it is a particular kind of independent contractor relationship.

the employer's right to *control* the "manner and means" of production.[153]

But the team-production theory—at least as it applies to curing moral hazard—is specifically addressed to the employer's inability to control inputs. Perhaps an Alchian and Demsetz manager can, through observation, at least partially control the manner of production. But it's doubtful that the Holmström manager does much that can be considered controlling production.

Of course, given that the work-made-for-hire doctrine was not enacted, and has not been developed, with the team-production theory in mind, it is unsurprising that it does not much reflect the details of that theory. Still, we suggest that a modified work-made-for-hire doctrine could facilitate the formation of team-production firms. Given the problems we have identified with the joint-work ownership structure, we suggest that the work-made-for-hire ownership structure—the vesting of a residual claim in a manager who does not provide an inseparable input to the team's output—be the default ownership structure for joint works. Courts may have to do some work to determine whether a team is organized on Alchian and Demsetz lines—in which case the manager may be someone like Spike Lee—or on Holmström lines—in which case the manager is more like Warner Bros.[154] Still, it is likely a better approach to the problem of joint works than the current default, which overcompensates minor contributors to a collaborative effort, ignores

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153 *Community for Creative Non-Violence*, 490 US at 751. Courts consider a long list of context-specific factors in evaluating whether a hiring party has the right to control the manner and means of production:

> [T]he skill required; the source of the instrumentalities and tools; the location of the work; the duration of the relationship between the parties; whether the hiring party has the right to assign additional projects to the hired party; the extent of the hired party's discretion over when and how long to work; the method of payment; the hired party's role in hiring and paying assistants; whether the work is part of the regular business of the hiring party; whether the hiring party is in business; the provision of employee benefits; and the tax treatment of the hired party.

Id at 751–52. A court must also determine whether the work was produced within the scope of that relationship by deciding whether the work is "of the kind [of work the author] is employed to perform"; whether the work was done during the author's ordinary work hours; and whether the author was motivated, at least in part, by a desire to serve his employer. Restatement (Second) of Agency § 228 (1958).

154 As noted above, there may be some cases of true joint partnership work. In those cases, the court would find no identifiable manager. Reputation and repeat play are likely to be constraining moral hazard. But the court can look for these factors. In those cases alone, the default of joint ownership might look the same as it does currently.

valuable management hierarchy, and thereby encourages opportunism by the contributors (where it does not entirely frustrate collaborative efforts at the outset).

B. Scope of Rights—the Derivative-Works Doctrine

The team-production theory also offers insights into the scope of rights that should be accorded a copyright owner. At the historical core of copyright law lie the reproduction right (which allows only the owner to make copies of the original work) and the distribution right (which allows only the owner to distribute copies of the original work).[155] More recently, the law has granted copyright holders an exclusive right to prepare a derivative work—that is, a work "based upon one or more preexisting works, such as a translation, musical arrangement, dramatization, fictionalization, motion picture version, sound recording, art reproduction, abridgment, condensation, or any other form in which a work may be recast, transformed, or adapted."[156] More than other copyright doctrines, this form of derivative-works right protects a pre-expression idea. The first novel in a series has no protection until the novel is written; but, after that, something closer to the idea of a sequel has substantial protection under the derivative-works right. The idea-expression dichotomy continues to police the boundary between the protected expression and unprotected idea.[157] Still, the derivative-works right pushes that boundary much harder than do the reproduction

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[155] See 17 USC § 106(1) (granting the copyright holder the exclusive right to reproduce the work); 17 USC § 106(3) (granting the copyright holder the exclusive right to distribute the work).

[156] 17 USC § 101. See also 17 USC § 106(2). By the time the derivative-works right was formally ensconced in the 1976 Act, however, the courts had already been applying the reproduction right to cover some of the things we might think of as covered by the derivative-works right. See, for example, *Nichols v Universal Pictures Corp*, 45 F2d 119, 121 (2d Cir 1930) (recognizing that "literal appropriation" is not the test for infringement of the reproduction right, and noting difficulties in discerning when so much "incident and character" is taken that it constitutes infringement even without copying the words of the original text). This was in part because a strict reading of the reproduction right as limited to only verbatim copies was susceptible to evasion by meaningless omissions from the original work—abridge a few paragraphs here and there, and you are outside the reach of a strict reproduction right. The derivative-works right goes further, though; it's not aimed at capturing clever defendants who are trying to evade liability by trivial modifications. Instead, the derivative-works right seems to add something substantive to the arsenal of rights granted the author upon creation of the original work: the ability to prevent others from making new works that incorporate significant portions of the original work and creative contributions to it.

[157] See *Baker v Selden*, 101 US 99, 102 (1879).

and distribution rights. And at a minimum, the derivative-works right protects expression that the holder of the right has yet to fix in a tangible medium. For these reasons, the derivative-works right occupies a unique place in the copyright firmament—something more than the limited rights that copyright ordinarily offers authors, but something less than the expansive rights that are associated with Blackstone's "sole and despotic dominion."[158]

The derivative-works right has been something of a puzzle for copyright scholars.[159] It might be justified by the same rationale that underlies copyright's basic incentive-access tradeoff.[160] Granting authors the exclusive right to create derivative works increases the value of those exclusive rights (because it allows the authors to control more works), and thereby increases authors' incentives to create in the first place. At the same time, by restricting access to works that are related to copyrighted works, the derivative-works right imposes social costs. The question of whether we ought to have a derivative-works right then turns on whether the increased incentive to create in the first instance is greater than the increased costs we bear by restricting access to derivative works.

One problem with this explanation of the derivative-works right as an additional incentive is that it means we are encouraging authors to create more of the kinds of works that lead to derivatives, but not more of the kinds of works that don't lead to derivatives—more fantasy novels involving boy wizards and fewer newspaper articles. It also protects (and therefore encourages the production of) derivatives themselves more than original ideas—unlike copyrights in original works, there is no need to write the sequel to prevent others from doing so.

But this view of the derivative-works right provides no basis on which to think this kind of distortion of the direction of creative activity would be desirable. If it's an additional incentive we seek, it seems the better approach would be an increased copyright term, a weaker independent-creation defense, or some

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158 William Blackstone, 1 *Commentaries on the Laws of England, in Four Books* 393 (J.B. Lippincott 1886).

159 See Pamela Samuelson, *The Quest for a Sound Conception of Copyright's Derivative Work Right*, 101 Georgetown L J 1505, 1532–42 (2013) (rejecting existing theoretical justifications for the derivative-works right as unsound, and offering an interpretation of the right informed by the statute's legislative history).

160 See Paul Goldstein, *Derivative Rights and Derivative Works in Copyright*, 30 J Copyright Socy USA 209, 216 (1983).

other increase in the value of the copyright that doesn't depend on the kind of creative work the author produced.

Another similar view suggests that the derivative-works right is designed to allow authors to proportion their investment in a work in response to revealed demand for it.[161] The story goes something like this: Before releasing a novel, an author and her publisher are unsure how many readers it might draw. So rather than invest in writing, publishing, marketing, and distributing the complete novel all at once, they might better produce it chapter-by-chapter. If chapter 1 is a hit, go ahead and write chapter 2. Almost surely something like this goes on in the TV industry, where shows are picked up based on pilots and then renewed (or cancelled) in accordance with ratings (or lack thereof). But this view also doesn't account for why the proportioned investment strategy varies in importance across industries—while it is the near-exclusive mode of production in the TV industry, and a dominant mode in the movie industry, it is much less important to the book publishing industry (although this is changing), and practically insignificant to the music industry.

An alternative view, articulated by Professor Michael Abramowicz, contends that the derivative-works doctrine prevents otherwise costly races to produce derivative works.[162] Derivative works may be close substitutes for each other, such that the social gains from additional derivatives of a single original work are often much smaller than the social gains from a new original work. If so, then the original work may be thought of as having created an essentially fixed pie of value to be allocated to the producers of derivative works. That fixed pie represents the copyright analogue to property law's sunken treasure.[163] The socially optimal result is to allocate the treasure to one party because that avoids wasteful races to recover it. The derivative-works right does the same thing by allocating to the creator of the original work the right to produce the fixed pie of related works. Without a derivative-works right, we would have suboptimal product differentiation in the market for creative works.

The extent to which derivatives of a single work substitute for each other is, however, an open empirical question. If it turns

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[161] See Randal C. Picker, *Fair Use v. Fair Access*, 31 Colum J L & Arts 603, 612–14 (2008).

[162] See Michael Abramowicz, *A Theory of Copyright's Derivative Right and Related Doctrines*, 90 Minn L Rev 317, 360 (2005).

[163] See id at 349.

out that the degree of substitutability between one derivative work and another is roughly the same as the degree of substitutability between a derivative work and an original, then this explanation of the derivative-works right is unsatisfactory. And there has been, to date, no empirical demonstration one way or the other.

1. The derivative-works right and the Holmström firm.

Our analysis suggests some different views of the derivative-works doctrine. First, the team-production theory can help shed light on the effect that a derivative-works right might have on creative production. The Holmström view suggests that the best way to organize collaborative creative production is to appoint a manager who has the power to reward or punish team members depending on whether the observed output of the team as a whole exceeds some threshold. The derivative-works right may facilitate the formation of a Holmström firm in two ways.

First, the derivative-works right may be an effective way to release the manager in a Holmström firm from the budget constraint in doling out rewards or punishments. To see why, consider a world in which no derivative-works right exists. Suppose that several actors wish to make a film and contract with a manager who will enforce penalties or allocate rewards. The first option is for profit sharing. But that will be ineffectual because it is budget constrained and therefore suffers from shirking problems. Any party that is promised a share of the profit from the project will benefit from everyone else's effort. The next alternative is a penalty. Penalties are difficult to negotiate because the participants may be risk averse or liquidity constrained. The alternative is to offer a prize that does not come out of the profit pool. The prize will be given to the entire team if a certain threshold of quality is met.

Here is where the derivative-works right has value. The manager can reward the input providers with participation in the derivative work (or penalize by exclusion). But without a derivative-works right, the manager would not be able to do that. If the manager's participation in upcoming derivative works is subject to the agreement of the creative inputs, then there will be ex post renegotiation to avoid enforcement of the penalty.[164]

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[164] There are some suggestions that highly sophisticated contractual techniques could avoid the problems described here. See Holden and Malani, *Contracts versus Assets*

The derivative-works right helps avoid such renegotiation. If the manager has the copyright in the original expressive work created by the team, then she also has the ability, by virtue of the derivative-works right, to permit or veto participation by any team member in the creation of closely related works. This allows the manager (or firm) to penalize (or reward) input providers (sometimes all of them) by excluding them from (or including them in) derivative works. Such penalties and rewards are evident in movie franchises. Even when a movie is moderately successful, a manager can penalize the team members if they don't meet expectations. Thus, the penalty may exist even where there is a profit. The manager, however, is not punished because she can assemble a new team and—to use the term of the film industry—pursue a "reboot."

This penalty will be roughly tied to the value the inputs collectively added. If the project achieved only the value that the average team would be expected to achieve, then the firm loses nothing by rebooting and hiring a new team that would be expected to do as well. If the reboot will cause the firm to take a hit, that suggests the original team produced value over the expectation for an average team and was not shirking.

The average expectation provides the certainty that is needed in the Holmström model. With sufficient certainty, a manager can set a penalty ex ante. Because the output is creative, though, uncertainty prevents her from doing so here. But because the derivative-works right sets the value of the penalty only after the film is released, the manager can update her expectations (thus increasing certainty) at that point, and define the penalty ex post. Early uncertainty is not a problem as long as a good idea of the expected average can be known ex post. And the manager has no incentive to penalize a value-producing team wrongfully because that will result in a loss to the manager as well.[165]

Consider in this light the divergent fates of *Batman Begins* and *Superman Returns*. Both films were well reviewed.[166] The

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and the Boundary of the Firm at *5 (cited in note 60). These techniques have not, to date, been widely adopted.

[165] This is all based on the assumption that the inputs are not directly observable. The value is attributed to the entire team. If the team does well but one team member is demonstrably bad, then the manager can play the monitoring role and expel them.

[166] Rotten Tomatoes scores *Batman Begins* 85 percent fresh and *Superman Returns* 76 percent. See *Batman Begins (2005)* (Rotten Tomatoes), online at http://www.rottentomatoes.com/m/batman_begins (visited Nov 24, 2013); *Superman*

Christopher Nolan–Christian Bale team's *Batman Begins* grossed $374 million worldwide.[167] *Superman Returns* grossed $391 million worldwide.[168] When the Christopher Nolan–Christian Bale team produced *Batman Begins*, and it turned out to be profitable beyond expectations,[169] Warner Bros. allowed them to create *The Dark Knight*. But when Bryan Singer's *Superman Returns* came in below the target threshold, Warner Bros. canceled the sequel and planned a reboot.[170] Although the two films were similar in terms of critical reception and revenue, one might surmise that the Nolan-Bale team surpassed the expected production from an average team, but the Singer team did not.

Profit-sharing agreements would not achieve these results because they can produce collective-action problems and lock in expectations before there is sufficient certainty. Indeed, by the numbers, the movies performed almost identically.[171] But *Batman Begins* beat expectations while *Superman Returns* missed them. A Warner Bros. executive reported of the Batman movie,

> I think people love the character, and it's been eight years since the franchise unfortunately took a negative turn [with *Batman and Robin*] . . . . It took the vision of a filmmaker like Christopher Nolan to bring it back, with a great script and cast. We're well positioned moving forward with the summer. We're going to have a first week of $85 million . . . . That's enough to bring Batman back for a sequel.[172]

Returns (2006) (Rotten Tomatoes), online at http://www.rottentomatoes.com/m/superman_returns (visited Nov 24, 2013).

167 See *Batman Begins* (Box Office Mojo), online at http://www.boxofficemojo.com/movies/?id=batmanbegins.htm (visited Nov 24, 2013).

168 See *Superman Returns* (Box Office Mojo), online at http://www.boxofficemojo.com/movies/?id=superman06.htm (visited Nov 24, 2013).

169 Expectations were low based on the decline of the previous *Batman* franchise. See Brandon Gray, *'Batman Begins' in the Shadows* (Box Office Mojo June 20, 2005), online at http://www.boxofficemojo.com/news/?id=1837 (visited Nov 24, 2013).

170 Expectations were high based on Singer's reputation and the success of recent comic book movies including *Batman Begins* but also the *Spiderman* movies.

171 Domestically, *Batman Begins* is sixteenth on the all-time list of comic book movies with a theatrical gross of $206 million. *Superman Returns* is seventeenth with a gross of $200 million (and a bigger opening weekend). Worldwide, *Superman Returns* grossed $391 million while *Batman Begins* only grossed $374 million. See *Comic Book Adaptation* (Box Office Mojo), online at http://boxofficemojo.com/genres/chart/?id=comicbookadaptation.htm (visited Nov 24, 2013).

172 Gray, *'Batman Begins' in the Shadows* (cited in note 169) (alteration in original), quoting Warner Bros.' Dan Fellman.

In stark contrast, the Warner Bros. response to *Superman Returns* was, "I thought it was a very successful movie, *but I think it should have done $500 million worldwide.*"[173] It made $391 million worldwide.[174] In the end Warner Bros. concluded that *Superman Returns* was just not successful *enough* (given expectations) to warrant a sequel.[175] The studio thus appears to have used the team's performance relative to expectations as the basis on which to decide whether to permit that team to participate in the derivative work.[176]

To summarize, participation in a derivative work has the potential to be the reward that the Holmström manager can offer team members. That participation can come in different forms. In the case of Alloy and its production of the *Gossip Girl* books, the original lead writer was rewarded with the right to future writing credits—a very valuable asset for a young writer. Though she worked on only the first eight novels, her contribution was rewarded with lead writing credits for four additional sequels, one prequel, one spin-off novel, and two spin-off series.[177] These credits helped launch her career as a solo author of

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[173] *Horn Planning Superman Sequel for 2009* (SuperHeroHype Aug 18, 2006), online at http://www.superherohype.com/features/articles/91753-horn-planning-superman-sequel-for-2009 (visited Nov 24, 2013) (emphasis added), quoting Warner Bros. then-President Alan Horn.

[174] Singer was quite surprised with the Warner Bros. response: "'That movie made $400 million!' Singer says incredulously. 'I don't know what constitutes underperforming these days.'" Olly Richards, *Singer Talks Superman Returns Sequel: Exclusive: Director Confirms Development* (Empire Online Mar 12, 2008), online at http://www.empireonline.com/news/story.asp?NID=22165 (visited Nov 24, 2013), quoting Bryan Singer.

[175] "Had 'Superman' worked in 2006, we would have had a movie for Christmas of this year or 2009 . . . . But now the plan is just to reintroduce Superman." Warner Bros. Pictures Group President Jeff Robinov, quoted in Lauren A.E. Schuker, *Warner Bets on Fewer, Bigger Movies—DC Comics Characters Play a Big Role; Superheroes Are a 'World-Wide Export'*, Wall St J B1 (Aug 22, 2008). The assessment of *Batman* seems to have been accurate. The sequels rank two and three on the all-time comic book adaptation list and are both in the top fifteen of all movies. See *Comic Book Adaptation* (cited in note 171); *Worldwide Grosses* (Box Office Mojo), online at http://boxofficemojo.com/alltime/world (visited Nov 24, 2013).

[176] We do not mean to say that Warner Bros.' expectations were necessarily correct. It is of course possible that the studio's expectations were too low for *Batman Begins* and too high for *Superman Returns*. We mean only to demonstrate that studios make decisions about whether to produce derivative works using the same team, based on whether the team exceeded or failed expectations. The success of a firm operating along these lines will depend on its ability to set accurate expectations. But this is an uncertain domain, and it is therefore plausible to think that studios often make mistakes.

[177] See Emily Nussbaum, *Psst, Serena is a Slut. Pass It On.*, New York (May 30, 2005), online at http://nymag.com/nymetro/arts/books/12058 (visited Nov 24, 2013).

novels outside of the firm. The team of writers of the subsequent *Gossip Girl* books and series did not receive the same ex post derivative rewards—presumably because, as the series became more formulaic, certainty and observability increased to levels where more conventional compensation for and monitoring of effort became increasingly effective.

Furthermore, it is easier to create a Holmström firm when there is at least partial certainty regarding the team's potential output. The manager needs to know how much the team could produce if the team members do not shirk so that the manager can set an appropriate threshold for reward. As compared to ordinary works, it is likely that derivative works have lower levels of uncertainty. Because the original work already exists, the manager has some sense of the demand for related works, which may help establish a baseline for the potential value of the team's collaboration. *Batman Begins* informs expectations for *The Dark Knight*. Prior entries in the Batman series of films informed expectations for *Batman Begins*. Even the value of a different medium within a franchise is informative. Sales of an *X-Men* comic book series help inform the studio's estimate of the potential revenues for a "successful" *X-Men* film.

This can help explain Hollywood's increasing preference for sequels and remakes over original works. Popular commentary indicates that Hollywood is unoriginal or afraid of risks. While we cannot exclude the possibility that Hollywood is simply risk averse, we are not persuaded by this as a complete explanation. After all, while films may be increasingly unimaginative, it does not appear that any such trend is taking place in television, where shows have become increasingly innovative.[178] It could well be that original films are high-risk, high-reward propositions while derivative works are low-risk, low-reward propositions; still, if the two have the same expected value, there should be no preference for one or the other.

But if it is the case that the Holmström firm is better able to coordinate activity when uncertainty about the outcome is low, and that making sequels or remakes is the best way to reduce

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[178] See, for example, Michiko Kakutani, *Television That's Worth Dissecting*, NY Times C1 (Dec 4, 2012) (reviewing Alan Sepinwall's book describing a dozen recent TV series "that have forged a new golden age in TV: bold, innovative shows that have pushed the boundaries of storytelling, mixed high and low culture, and demonstrated that the small screen could be an ideal medium for writers and directors eager to create complex, challenging narratives with 'moral shades of gray'"). Or, better yet, see the carousel scene from *Mad Men*. *Mad Men: The Wheel* (AMC Oct 18, 2007).

uncertainty for films, then we have a plausible explanation for Hollywood's preference for a seventh version of Batman. The point is not that the Hollywood firms have an aversion to risk or creativity. Instead, they have a preference for lowest (relative) cost production. As firms, their comparative cost advantage is where there is a mechanism that facilitates firm production. If the derivative-works right provides such a mechanism, then firm production will gravitate toward producing derivative films and films that are more likely to produce valuable derivative rights. For more original work without derivative rights, the bigger firms have no comparative advantage over independent filmmakers. They can do just as well buying those on the market to distribute after they are produced.

In television, the norm that the dominant product is a series—with its built in derivative work—may serve the same role without limiting creativity as much.[179] As for the fact that Hollywood's so-called golden age was not driven by such a preference, we note casually that the derivative-works right was only firmly enacted into law in the 1976 Copyright Act,[180] which coincides nicely with the 1977 release of the urtext of Hollywood franchises: *Star Wars*.[181]

2. The derivative-works right and the Alchian and Demsetz firm.

The derivative-works right may also facilitate the formation of an Alchian and Demsetz firm, although by a somewhat different mechanism. Recall that the Alchian and Demsetz manager specializes in observation. Although it is difficult to precisely discern whether a given input is contributing to the team's collaborative efforts, a manager may, through skill and experience, be at least partially able to overcome the unobservability constraint. When she does so, she can coordinate the team's activities by allocating and reallocating tasks so as to maximize the total output.

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179 It may be argued that the series format itself limits creativity.

180 Copyright Act, Pub L No 94-553, 90 Stat 2541 (1976), codified as amended at 17 USC § 101 et seq.

181 We do mean this casually. The 1976 Copyright Act only took effect on January 1, 1978. See Copyright Act, Pub L No 94-553, 90 Stat 2541 (1976), codified as amended at 17 USC § 101 et seq. And derivative-works rights were not unknown prior to the Act. See note 156. Still, the coincidence in timing is sufficiently striking that it provides some intriguing grounding for the theories we discuss, and could form the basis for later empirical work testing these theories.

The derivative-works doctrine might therefore be thought to rest on an empirical claim about the learning curve of the centralized monitor. It is plausible, though of course by no means certain, that the person who metered the inputs during the production of an original work learned something valuable about those inputs. Perhaps the monitor discovered that one of the inputs has a particularly strong command of a regional dialect, useful for writing dialogue for characters from that region. Or perhaps the monitor learned that one of the inputs responds poorly to a common motivational technique. Whatever it is that the monitor has learned during the production of the first work may well be put to use in the production of the second. The derivative-works doctrine thus stands on stronger footing if, as seems plausible, the best person to monitor the production of related works is likely to be the person who monitored the production of the first work.[182]

Consider in this light the classic case involving *Rocky IV*.[183] Timothy Anderson wrote a treatment describing a potential story for a sequel to *Rocky III*, incorporating the same characters as the first three films in the series in a new story involving Rocky fighting a Russian boxer under international spotlights.[184] Anderson met with the studio's president and a member of its board of directors to discuss the possibility of the studio buying the rights to the treatment for *Rocky IV*.[185] Ultimately, their negotiations went nowhere.[186] After *Rocky IV* was released, Anderson sued, contending that it infringed on his treatment.[187] The court rejected his claim, granting summary judgment to the studio because Anderson's treatment constituted an unauthorized derivative work and Anderson therefore had no rights to it.[188]

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[182] The right to produce derivative works is transferrable. As a result, if someone else is better placed to fill the manager's role for subsequent works, the manager can always agree to be bought out. This is also consistent with Alchian and Demsetz's analysis of the characteristics of a firm. And it responds to the classic Coasean case for allocating entitlements: where transaction costs are high, we should aim to vest the entitlement in the highest-value user.

[183] See *Anderson v Stallone*, 1989 WL 206431, *1–4 (CD Cal).

[184] See id at *1.

[185] See id.

[186] See id at *1–2.

[187] *Anderson*, 1989 WL 206431 at *5.

[188] Technically, Anderson only lost the rights to those portions of the derivative that incorporated the original. But because the derivative here was infused with the original—all of *Rocky IV* incorporated the characters and backstory of the previous films—Anderson was left without a copyright at all. See id at *6–18.

The conventional view of the derivative-works doctrine suggests that we have a simple lens with which to view this case. On one hand, maybe we should worry that Sylvester Stallone wouldn't have written the first film if he wasn't sure he could appropriate the returns from the sequels. Alternatively, maybe we want to encourage many Timothy Andersons to write many versions of *Rocky IV*, so that we can then choose which one is best by allocating our entertainment dollars accordingly. If the first concern outweighs the latter, the derivative-works right is a good idea; otherwise, it's a bad one. More sophisticated views might suggest that Anderson could have better spent his limited creative resources writing treatments for unrelated works that would add more social value overall by virtue of their differences from existing works.

We view the case differently. If *Anderson v Stallone*[189] came out the right way, it may well have been because the monitor who oversaw the production of the first three films knew more about the inputs to those films—actors, screenwriters, cinematographers, directors, crew—than anyone else. She was therefore best situated to produce the next film. And because bargaining over intellectual property assets—especially before they are produced—is difficult,[190] we need to worry a great deal about that initial allocation of the entitlement to produce the sequel.[191] The team-production view of copyright law that we have articulated gives us reason to think that *Anderson* got it right.

3. The derivative-works right applied to sole-authored works.

We have thus far been focusing on the ways in which the team-production theory explains how the derivative-works right affects the production of joint works. But the team-production theory may also explain the effect of the derivative-works right on the production of sole-authored works. Indeed, the team-production theory may help resolve a vexing recurring question in copyright law: Is there a coherent distinction between works whose sale might infringe the distribution right and those that infringe only the derivative-works right? This question is important not only at a conceptual level, but also at a practical one.

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189 1989 WL 206431 (CD Cal).

190 See Merges, *Intellectual Property Rights* at *17–19 (cited in note 14).

191 This is a straightforward application of the Coase Theorem. See generally R.H. Coase, *The Problem of Social Cost*, 3 J L & Econ 1 (1960).

The first-sale doctrine provides a defense to infringements of the distribution right, but not to infringements of the derivative-works right.[192] So if the defendant had actually purchased a copy of the original work and then sold a modified version of that copy, her alleged infringement gives rise to liability only if the modified version constitutes a derivative work.

We propose that derivative works should include only those works for which the contributions of the original author and those of the subsequent author constitute "inseparable or interdependent parts of a unitary whole."[193] In other words, when the subsequent work and the original work resemble the contributions of authors to a joint work, the subsequent work is a derivative of the original.

Consider, for example, J.R.R. Tolkien's series of books. Tolkien was the sole creative input for *The Hobbit*, *The Fellowship of the Ring*, *The Two Towers*, and *The Return of the King*. No team-production problem is apparent in a single author writing several books.

Now imagine that J.K. Rowling decided to write a sequel to *The Fellowship of the Ring*; call it *Harry Potter and the Two Towers*. In such a scenario, a team-production problem would arise because it would be difficult to allocate responsibility for the value of *Harry Potter and the Two Towers* between the concepts, storylines, themes, prose, and characters introduced by Tolkien in *The Fellowship of the Ring* and those introduced by Rowling in *Harry Potter and the Two Towers*. Both Tolkien and Rowling would be partially responsible for creating the value embedded in *Harry Potter and the Two Towers*, but it would be hard to know how much is attributable to each of the two authors. As this example shows, the team-production theory illuminates another role of the derivative-works right: avoiding the creation of team-production problems that would otherwise arise over the course of several related works.

An additional benefit of this interpretation can be found when there is an opportunity for contemporaneous production and negotiation. In the example of Tolkien and Rowling, the law may prevent team-production problems for sequential creation. If Tolkien and Rowling were contemporaries, the rule would have a major impact on their relationship. Suppose Rowling has

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192 See 17 USC § 109.

193 17 USC § 101.

some valuable creative ideas that build on Tolkien's work. If Rowling can wait until Tolkien finishes his original work to create her derivative product on her own, then she has less incentive to work with Tolkien. But we might expect that the value of their team production would be greater if they actually worked in a team. Therefore Rowling is encouraged to approach Tolkien to collaborate on the derivative work (or perhaps on the original work).[194] In this way, the law can encourage collaboration between the creative inputs, which we might think is superior to sequential independent adaptation. On the other hand, where the value of sequential adaptation is easily allocated, no team-production problems arise.

This view can help resolve the conflict in the *A.R.T.* cases, in which the Seventh[195] and Ninth Circuits[196] reached opposite results facing nearly identical facts. The defendant in these cases bought small lithographs and prints created by the plaintiff artists.[197] The defendant then mounted those lithographs and prints onto ceramic tiles, which the defendant then sold.[198] The Ninth Circuit concluded that the defendant infringed the derivative-works right;[199] the Seventh Circuit concluded that the defendant would have infringed only the distribution right, and therefore was shielded by the first-sale doctrine.[200] Each court reached its result after wringing meaning from sparse statutory text.[201]

A more sensible analysis might ask whether the defendant's activity gave rise to problems of observability, verifiability, or uncertainty, or difficulty allocating between defendant's and plaintiff's contributions. It seems that here, no such problems arise. A contract might easily be written requiring that a lithograph be mounted on a ceramic tile and payment conditioned on

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194 In this scenario, Rowling will be vulnerable to appropriation of her idea by Tolkien, who owns the derivative-works right that encompasses her proposal. Although trust and reputation might reduce Rowling's vulnerability, these considerations are beyond the scope of the present work.

195 See *Lee v A.R.T. Co*, 125 F3d 580 (7th Cir 1997).

196 See *Mirage Editions, Inc v Albuquerque A.R.T. Co*, 856 F2d 1341 (9th Cir 1988).

197 See *Lee*, 125 F3d at 580; *Mirage Editions*, 856 F2d at 1342.

198 See *Lee*, 125 F3d at 580; *Mirage Editions*, 856 F2d at 1342.

199 See *Mirage*, 856 F2d at 1344.

200 See *Lee*, 125 F3d at 582–83.

201 The Ninth Circuit reasoned that mounting on a ceramic tile "recast or transformed" the work. *Mirage*, 856 F2d at 1344. The Seventh Circuit concluded that the defendant's activities did not constitute "art reproductions" and that including the ceramic tile within "recast" or "transformed" language would render impermissible unauthorized framing of art and similar activity commonly performed by art buyers. *Lee*, 125 F3d at 582.

successful performance of that relatively straightforward task. For this reason, we think the Seventh Circuit's result the better one.

CONCLUSION

Paper Lantern Lit, a boutique competitor of Alloy,[202] doesn't buy any idea pitches on the market: "[W]e prefer to focus on specially-crafted in-house 'sparks' that we've spent months cultivating. We don't just come up with ideas on the fly—we take the time necessary to analyze the concept, build a solid plot, and assess its viability in the market."[203]

Paper Lantern Lit prides itself on its "spark" development.[204] The sparks are shared at team meetings. No one "owns" the sparks in a property sense. The norm governing the rights in an idea is that any idea shared at the meeting belongs to Paper Lantern Lit. Employees are free to pursue their own projects based on ideas not discussed at the meeting. The key to making this system work is being able to differentiate similar ideas and knowing what makes an idea new. *Romeo and Juliet* meets the Upper East Side is not a new idea; it's just a setting choice for a formula plot. There needs to be something more specific for the firm to find the contribution valuable and for it to invoke the norm of firm ownership.[205]

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[202] Alloy is arguably the biggest player in the book-packaging industry. But newcomers like Paper Lantern Lit have started to spring up in the last decade. Paper Lantern Lit is a boutique literary incubator aiming largely at the same audience (though with arguably different content goals). See Hillyer Interview (cited in note 6) (cofounder of Paper Lantern Lit); Danielle Sacks, *Paper Lantern Lit Matches Undiscovered Writers with Publishers to Create Mass Market Hits* (Fast Company Oct 15, 2012), online at www.fastcompany.com/3001757/paper-latern-lit-matches-undiscovered-writers-publishers-create-mass-market-hits (visited June 9, 2013). A more controversial recent entrant focusing on a broader audience is Full Fathom Five, founded by James Frey (infamous for the fictional nonfiction piece *A Million Little Pieces*). See Suzanne Mozes, *James Frey's Fiction Factory* (New York Magazine Online Nov 12, 2010), online at http://nymag.com/arts/books/features/69474 (visited Nov 24, 2013) (describing the production process at Full Fathom Five). One personal tutoring website advises students not to read Full Fathom Five novels: "While we won't make the blanket statement that all book packagers are slowly killing literature, it's pretty safe to say that Full Fathom Five is." *Read This Not That: Full Fathom Five* (C2 Education Feb 23, 2012), online at www.c2educate.com/read-this-not-that/read-this-not-that-full-fathom-five (visited June 9, 2013).

[203] *WTF* (Paper Lantern Lit), online at http://www.paperlanternlit.com/wtf (visited Nov 24, 2013). Alloy follows a similar model.

[204] See id.

[205] See Hillyer Interview (cited in note 6). Alloy has a similar process for idea creation: "Ideas are generated in weekly development meetings and are fleshed out into a

But even when the norm is invoked, it is difficult to enforce. Whether team members are volunteering only their disposable ideas (while saving the best for themselves) or whether they are using the ideas of others at the meetings to derive ideas for their own personal works may be difficult to observe and almost impossible to verify. But the firm's managers are experienced monitors[206] and seem to think there is a sufficient level of certainty to facilitate the penalty and reward system through payments, creative credits, and derivative rights. The same is true of Alloy.[207] In the end, the more Paper Lantern Lit and Alloy can monitor or use tools like derivative-works rights to solve moral-hazard problems, the more cost effective their business models will be—and the more audiences will be consuming books like *Gossip Girl*, *Vampire Diaries*, and *The Fury*.

In this Article, we have explored the factors that drive a firm like Paper Lantern Lit to create its own sparks at team meetings as well as the obstacles that may make that difficult. In turn, we have looked at how the law of copyright can affect those factors. The impact may change the way Paper Lantern Lit does business; or it may allow it to provide more creative products; or if it is dramatic, it may shift production to different organizational forms (and different creative content) altogether.

Other changes may occur when technology shifts. Indeed, the emerging presence of these and other firms we have discussed may be explainable by the development of both legal doctrine and monitoring expertise. Technological advances such as the monitoring of creative brain activity could encourage collaborative creative firms and again potentially change the nature of the art and science we consume. The law's response to these developments will raise complicated normative questions about the value of various types of creative production.

These factors will differ across industries. For example, in some creative industries brain activity may be more difficult to monitor or the ability to capture derivative rights might be low.

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short summary by an editor. . . . [A writer is assigned and the] writer then hashes out a plot with [executive VP Josh] Bank, one or two other editors, and Sara Shandler, Alloy's editorial director." Mead, *The Gossip Mill*, The New Yorker at 62 (cited in note 5).

206 Paper Lantern Lit was founded and is managed by a duo made up of a best-selling author with editorial experience and a veteran editor who is also a published author. See *The Architects* (Paper Lantern Lit), online at http://www.paperlanternlit.com/architects (visited Nov 24, 2013).

207 See text accompanying notes 176–78 (discussing the differing derivative-rights rewards for the initial and subsequent authors of the novels in the *Gossip Girl* series).

Those industries will be organized differently. This may help explain, for example, norms and contracts that operate differently in the restaurant industry. The intellectual property rights in creative menu items[208] are much weaker than they are for books, television, and film. Because restaurant teams cannot use the intellectual property mechanisms we have identified here to facilitate their organizational structures, we should expect contracts in the restaurant industry to allow easy exit from the relationship, and rewards and penalties to take other forms like reputation.

Lawyers and scholars must consider these differences along with the traditional factors and doctrines that dictate our intellectual property law. The rights in any creative work—whether a menu item or a movie—should be determined as much by the respective effect those rights have on the organization of collaborative creativity in the restaurant and film industries as by traditional notions of incentives in intellectual property theory.

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[208] See generally Christopher J. Buccafusco, *On the Legal Consequences of Sauces: Should Thomas Keller's Recipes Be* Per Se *Copyrightable?*, 24 Cardozo Arts & Enter L J 1121 (2007).