

Mind Control: Firms and the Production of Ideas

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I. INTRODUCTION

The central questions for economic theories of the firm concern how the production of a good is organized (in the market or within a firm) and why that organization prevails.¹ Derivative to these questions, legal scholars ask how the law affects and is affected by any particular organizational structure. Emerging literature looks at these questions in connection with the law of intellectual property.² The prevailing theories in that literature focus primarily, though not exclusively, on patent law and generally adopt a property-rights theory of the firm. Those theories, focusing on residual control and hold-up problems, have shown that as patent rights become stronger, firms may become smaller because property rights facilitate market transactions that would otherwise be too cost-

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1. Ronald Coase launched the field by asking these questions. R. H. Coase, *The Nature of the Firm*, 4 *ECONOMICA* 386 (1937). The questions have received a great deal of attention over the last four decades. The foundations of that inquiry can be found in some of the major early contributions. See, e.g., Armen A. Alchian & Harold Demsetz, *Production, Information Costs, and Economic Organization*, 62 *AM. ECON. REV.* 777 (1972); Sanford J. Grossman & Oliver D. Hart, *The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration*, 94 *J. POL. ECON.* 691 (1986); Oliver Williamson, *Vertical Integration of Production: Market Failure Considerations*, 61 *AM. ECON. REV.* 112 (1971); see also Philippe Aghion & 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 (2011) (summarizing the current state of the endeavor of analyzing the firm).

2. See, e.g., Ashish Arora & Robert P. Merges, *Specialized Supply Firms, Property Rights and Firm Boundaries*, 13 *IND. & CORP. CHANGE* 451 (2004); Oren Bar-Gill & Gideon Parchomovsky, *Law and the Boundaries of Technology-Intensive Firms*, 157 *U. PA. L. REV.* 1649 (2009); Jonathan M. Barnett, *Intellectual Property as a Law of Organization*, *S. CAL. L. REV.* (forthcoming 2011), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1623565; Dan L. Burk & Brett H. McDonnell, *The Goldilocks Hypothesis: Balancing Intellectual Property Rights at the Boundary of the Firm*, 2007 *U. ILL. L. REV.* 575; Dan L. Burk, *Intellectual Property and the Firm*, 71 *U. CHI. L. REV.* 3 (2004); Érica Gorga & Michael Halberstam, *Knowledge Inputs, Legal Institutions and Firm Structure: Towards a Knowledge-Based Theory of the Firm*, 101 *NW. L. REV.* 1123 (2007); Robert P. Merges, *Intellectual Property Rights, Input Markets, and the Value of Intangible Assets* (unpublished draft Feb. 9, 1999).

ly. Small, innovative suppliers will not invent component inputs if they cannot protect their invention against post-disclosure appropriation. The producers of the final product will therefore have to develop the technology in-house or the invention supplier will have to perform the post-invention development itself. These insights have important implications for the design of law.³

But, as with any emerging literature, there is a large swath of production that is still unexplained. In this Essay, I identify a unique set of intellectual production activities that do not fit squarely into the existing theories of intellectual property and the firm: namely, the actual production of new and unique ideas. I say “actual production” to differentiate from the well-examined questions of integrating innovation with post-production transfer, development (including synthesis into a larger good), and marketing. The actual production, on the other hand, is the pre-development mental process (though nonmental inputs are often involved) that gives birth to an idea that did not previously exist.

The existing literature focuses on whether a firm that specializes in post-production development will integrate with the modular unit of actual idea production however that production might be organized⁴—on *where* the idea is produced rather than *how* it is produced. The organization within the modular unit of the actual idea production is left open. Unanswered are questions of if and how inputs to idea creation will come together and whether collaborative production of ideas can be fostered or inhibited by markets or firm hierarchies.

The importance of this gap is underappreciated. In particular, the organization of the production of a component idea will often affect whether that production function can be integrated into the larger firm at all. Analogizing to a classic example for theorists of the firm,⁵ a theory asserting that the production of a car body would be vertically integrated into the automotive production function would be problematic if it turned out that the production of car bodies was itself a disparate and unintegrated production function. Much of what has been written assumes that the specific organization of idea creation is a simple matter: production of an idea can be achieved by any economic actor and current employees can be directed to produce the new idea; or, when creation is

3. See *supra* note 2.

4. See, e.g., Arora & Merges, *supra* note 2, at 452.

5. See Douglas G. Baird, *In Coase's Footsteps*, 70 U. CHI. L. REV. 23 (2003) (retracing the history of General Motors-Fisher Body integration that features prominently in many theory-of-the-firm analyses).

specialized, the relevant economic actor can be easily identified and integrated into the larger firm.⁶

Moreover, the literature on intellectual property and the firm applies the property-rights theory to suggest that integration solves a potential hold-up⁷ problem created by weak intellectual property rights. But integration in the property-rights sense requires the ownership of residual control rights, and that control can be difficult or impossible to achieve for idea production. As I discuss below, the quality that differentiates the production of a new idea from more traditional production (tangible products or standard services, for example) is that the production of the idea is often difficult to observe, verify, or direct, and may be uniquely within the abilities of a particular individual. Firms cannot own the residual rights to things that are within an individual's head and that can never be observed or verified. Thus, lack of control⁸ of the mental process makes it difficult to integrate the uniquely qualified idea creator into a firm in the property-rights sense.

But we do see integration in some of these cases. Indeed, we see a wide variation of organization for idea creation. Some creative production is done solely on the market (the most creative novels); other creative production is done within collaborative firms under the direction of a hierarchy (movie production and the production of some other genres of novels). And yet none of these variations in the organization of the production of new ideas can be explained by the strength or weakness of property rights in the end product. Nor can they be explained solely by ownership of residual rights to control hold up. Whether a new comic book, novel, or toy is created by a hierarchical firm, a web of market transactions, or an individual, has little to do with the strength of copy-right protection and more to do with the costs of verifying and controlling inputs on one hand and the value to be gained from collaboration on the other.

6. See, e.g., Arora & Merges, *supra* note 2, at 452, 461; Paul J. Heald, *A Transaction Costs Theory of Patent Law*, 66 OHIO ST. L.J. 474 (2005); Robert P. Merges, *A Transactional View of Property Rights*, 20 BERKELEY TECH. L.J. 1477, 1517 (2005).

7. As discussed below, the primary source of hold up derives from what is known as the disclosure paradox: with weak intellectual property rights, once an innovator discloses an innovation, the potential buyer can appropriate the idea without paying for it. The result is that the innovator will not be able to disclose (and therefore cannot market) the innovation. See *infra* Part II.B.

8. I use the term "control" to denote the ability to direct activity. Control can be achieved through different methods. A hard asset is controlled in the sense that the owner can allocate it however she pleases. Human capital may be controlled by various incentive mechanisms. But incentive mechanisms require either observability or verifiability to be implemented. A pure idea in someone's head would be uncontrollable by a firm if the firm could not allocate it without the agreement of the individual, and incentive mechanisms could not be used because the idea's use is neither verifiable or observable.

This Essay thus highlights an area of intellectual production that cannot be explained by the existing literature on intellectual property and the theory of the firm, and it suggests that some underappreciated alternate theories—like team production—might be at play.⁹ I do not claim that the conclusions found in the existing literature are incorrect, but rather that they are limited in scope. Property-rights theories tell us about whether and how an existing intellectual input or the modular unit that produces it will be integrated within a larger development firm but less about how the input will be created in the first place—that is, how the modular unit will itself be organized.¹⁰

I present examples of idea production that conflict with the existing theories to demonstrate these limitations. I focus largely on the field of copyright, showing that the primacy of idea creation for copyrightable work places virtually the entire field¹¹ outside the realm of existing theories.

I begin with a brief discussion of prevailing theories of intellectual property and the firm and the difficulties of applying those theories to pure idea creation in Part II. I then use two high-profile copyright cases to illustrate the need for a new legal theory for the organization of idea creation in Parts III and IV. I conclude with some thoughts on directions for new theories in Part V.

II. PREVAILING THEORIES OF INTELLECTUAL PROPERTY AND THE FIRM (AND THEIR LIMITATIONS)

A. *The Prevailing Theories*

To be precise, the existing literature does not completely ignore the actual production of ideas. But the assumed question has been whether the post-production development firm directs its workers to create an idea or whether it purchases the idea on the market. A slight variation on this question is whether the development firm integrates the particular creative firm (or individual) who produces the idea rather than purchas-

9. For some limited discussion of team production in this field, see Merges, *supra* note 2, at 20–26; Burk & McDonnell, *supra* note 2; and Heald, *supra* note 6.

10. Of course weakness and strength of intellectual property rights will have another effect on the organization of production. If rights are too weak (or perhaps too strong) the production may never occur because the incentives for creation are dampened. These incentives need not be pecuniary. It has been suggested that non-pecuniary incentives exist for the production of intellectual property. Such “expressive incentives” may change the calculus of how property rights affect the production of intellectual property. See generally Jeanne C. Frommer, *Expressive Incentives in Intellectual Property*, 98 VA. L. REV. (forthcoming 2012). But that is a well-explored question that is less about the theory of the firm and more about the incentive effects of intellectual property law generally.

11. For the purposes of this Essay, I focus on the traditional copyright contexts like music, movies, and books and put aside the complexities of fields like software.

ing it from that same firm on the market.¹² The converse of those questions would be whether the idea-creating firm directs its employees to perform post-creation development or acquires a development firm.¹³ These frameworks all share the common assumption that the idea is a thing that exists or can be caused to exist at will. They do not dig into how exactly the idea comes to exist in the first place or whether that production function requires a particular (sub)organization or is specialized to certain individuals.

This post-creation focus on integration is a natural result of the current landscape of the law. Only at the beginning of this stage can an idea receive legal protection. Copyright law protects the expression of ideas in a particular medium.¹⁴ Patent law protects ideas that have been reduced to practice.¹⁵ Those transformations must necessarily occur after creation. Pure ideas—before they are transformed into expressed media or invention—do not have substantial legal protection. Indeed, until recently, legal scholarship generally, and not just in the theory-of-the-firm field, had largely neglected the study of underlying ideas.¹⁶

With that backdrop, theorists often ask the question: do firms make or buy inventions? And they look at how the design of patent law affects the answer. The theories offered tend to focus—as much of patent scholarship does—on the strength and allocation of property rights.¹⁷ Accordingly, the literature almost universally adopts and applies the prevailing property-rights theory of the firm.¹⁸ That theory, pioneered by Oliver

12. Arora & Merges, *supra* note 2, at 453.

13. This version is less often discussed in the literature presumably because the idea-creator is often financially constrained and at an economies-of-scale disadvantage. For example, in the movie business it may be easier for a distribution company to integrate content creation for the movies it distributes than for one movie production team to take on its own distribution and marketing. In the book publishing industry, we would be surprised to see an author buy a publishing house. Of course as authors become less financially constrained, and as publishing becomes cheaper and less subject to economies of scale, self-publishing may become more common. I explore these nuances of the publishing industry in further detail with Andres Sawicki in *Teams, Creativity, and the Firm* (work in progress).

14. *See, e.g.*, Copyright Act of 1976, Pub. L. No. 94-553, 90 Stat. 2541; *Baker v. Selden*, 101 U.S. 99 (1879).

15. Some have noted a trend toward the expansion of patent law to cover “embryonic inventions” and naked ideas. Oren Bar-Gill & Gideon Parchomovsky, *A Market Place for Ideas?*, 84 TEX. L. REV. 395, 397 (2006); *cf. Bilski v. Kappos*, 130 S. Ct. 3218 (2010).

16. This gap in analysis is shrinking. *See* Bar-Gill & Parchomovsky, *supra* note 15, at 395 (noting that “little attention” has been paid to the law of underlying ideas, and proposing limited and narrow legal entitlements for certain ideas); Arthur R. Miller, *Common Law Protection for Products of the Mind: An Idea Whose Time Has Come*, 119 HARV. L. REV. 703, 705 (2006).

17. I present here just a brief summary of the literature in the field. Burk and McDonnell, *supra* note 2, provide an excellent and in-depth review of the literature.

18. Dan Burk, in one of the early journeys into the field explained, “In a so-called information age, where the most important assets of firms increasingly are intangible assets, one might expect

Hart, Sanford Grossman, and John Moore, suggests that firms will integrate an asset—by taking a property right in it—to combat the risk of hold up that results when perfectly complete contracts cannot be written.¹⁹ Because a property right implies residual control over the asset, the owner of the asset has control (to the extent contracts are silent) over the future allocation of that asset's productive use. Parties will therefore structure ownership ex ante to minimize the costs of opportunistic behavior that would otherwise occur ex post. For example, if the separate managers of assets A and B cannot contract completely but have to make relationship specific investments in their assets in period one, they will worry about hold up in period two and underinvest. Manager A will not specialize his skills or assets to the relationship in period one if Manager B can extract all of the returns in period two.

One solution is to allocate residual control to whoever's investment is more important. If Manager A is the residual owner of assets A and B, she does not have to worry as much about hold up because she controls the use of the assets. She will therefore not have reduced incentives to invest in period one. The solution is not perfect because Manager B may still underinvest. The integration decision therefore turns on whose investment decisions are more important.²⁰

Applying the property-rights theory to patent law, the existing work has shown that the boundaries of the firm²¹ will shift depending both on the strength of the legal property rights and on the default allocations of those rights between employees and employers.²² Additional work has shown that those considerations will also influence other forms of contracts that substitute for strong property rights.²³ Some scholars have also suggested that these answers to the invention question might apply to the decision between making or buying the expressions of ideas covered by copyright law.²⁴

The leading theory of intellectual property and the firm, pioneered by Robert Merges, posits that weak intellectual property rights lead to a risk of period-two hold up.²⁵ The most obvious hold-up risk arises with

that property-based theories of the firm would be readily applied to intellectual property." Burk, *supra* note 2, at 3; *see also* sources cited *supra* note 2.

19. Grossman & Hart, *supra* note 1, at 691.

20. *See generally* Aghion & Holden, *supra* note 1, at 183.

21. The "boundary of a firm" is generally the line between market transactions and internal transactions. *See* Bengt Holmstrom & John Roberts, *Boundaries of the Firm Revisited*, 12 J. ECON. PERSP. 73 (1998); *see also* Coase, *supra* note 1.

22. *See supra* note 2.

23. Bar-Gill & Parchomovsky, *supra* note 2.

24. Bar-Gill & Parchomovsky, *supra* note 2; Burk & McDonnell, *supra* note 2, at 606–11.

25. *See* Merges, *supra* note 2.

intellectual property's classic disclosure paradox.²⁶ If the innovating firm has no property right in its invention, then any disclosure of that invention to a potential user is precarious. The risk that the potential user will appropriate the information creates a disincentive for the innovating firm to make any ex ante investments in the relationship.²⁷ The potential innovator will not innovate if it cannot sell the innovation. The solution to the disclosure problem is to integrate everything else. Thus, with supplier (*S*) and buyer (*B*), *B* will integrate *S* to avoid the disclosure problem because "if *B* and *S* are part of the same firm, revelation of proprietary information is of no consequence."²⁸ But integration brings costs. Integrating *S* into *B* reduces *S*'s incentives and causes a welfare loss.²⁹ For example, *S* may shirk or be less innovative as a division or employee than as a stand-alone firm or entrepreneur.³⁰ Merges points out that the law can solve the disclosure problem without requiring integration by creating strong patent rights. As property rights strengthen, the disclosure problem is reduced, and market transactions become less costly.³¹ *S* can patent its invention, disclose it without concern, and sell it to *B*. The hold-up problem is smaller, and integration is less likely. *S* can now exist as an independent firm if such existence is the otherwise optimal solution.

Oren Bar-Gill and Gideon Parchomovsky have pointed out that integration is not the only solution to a hold-up problem. In the absence of strong property rights, parties might substitute contractual terms that allocate access to the innovation or create covenants not to compete. To the extent the law fosters or limits these contractual arrangements, it will alter the boundaries of firms. Thus, firm boundaries are determined both by the strength of intellectual property rights and by the enforceability of certain contractual arrangements.³²

26. Burk & McDonnell, *supra* note 2, at 584 (identifying the disclosure problem as an extreme variation on the hold-up problem).

27. See Merges, *supra* note 2.

28. Arora & Merges, *supra* note 2, at 460.

29. The integration of *B* into *S* is less often discussed. It is reasonable to assume that economies of scale or financial constraints may often make integration in that direction more difficult to achieve. See *supra* note 13; see also Burk & McDonnell, *supra* note 2, at 583 (explaining that a person other than the original creator will typically be more capable at performing the post-development tasks).

30. See Arora & Merges, *supra* note 2, at 454; Merges, *supra* note 2, at 9.

31. See Merges, *supra* note 2, at 18 (noting that "property rights in [the asset] create the preconditions for exchange"); Merges, *supra* note 6, at 1485.

32. See Bar-Gill & Parchomovsky, *supra* note 2; Anup Malani & Richard Holden, *Contracts and the Boundary of the Firm* (Nat'l Bureau of Econ. Research, Working Paper, 2012), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1990550.

Dan Burk and Brett McDonnell also build on Merges's work. They show that while overly weak intellectual property rights may lead to integration, the same is true of overly strong intellectual property rights. Strong property rights result in an anticommons problem where firms use their rights to block each other from innovation.³³ In response, firms may integrate the innovative process. Rather than attempting to license technology in a market mired in a patent thicket, the firms will internally attempt to invent around the patents.³⁴ Alternatively, the end producer may "choose to buy up those with related rights as a way around the costs of interfirm bargaining."³⁵ Burk and McDonnell thus arrive at the "goldilocks hypothesis" that there exists an optimal or "just right" level of intellectual property rights, and any deviations from that level (toward strength or weakness) will cause firm size to increase.

Burk and McDonnell also suggest that the allocation of intellectual property rights between employees and employers will affect firm size. Here they suggest that deviations from a just-right allocation (either toward employee or toward employer) will cause firm size to shrink. Employees leave firms as the allocation of rights to employers become too onerous and difficult to contract around.³⁶ Similarly, firms will shed workers as the allocation of rights to the employees become too onerous.³⁷ Put in terms of a property theory, the benefits of a firm—ownership of residual control—are lost if the law allocates all residual control to employees.

B. The Limitations of the Prior Literature

The prior literature and its focus on a property-rights theory of the firm is useful but limited because it does not get us very far in analyzing how the actual creative function is organized. The property-rights theories treat the production of the invention or idea as a modular input that can either be made or bought without asking about how the actual pro-

33. See Burk & McDonnell, *supra* note 2, at 616–17.

34. This outcome is contingent on particular assumptions. The ability of a firm to invent around a patent may be significantly reduced by the very strength of the rights that create this need to contract around the patent thicket in the first place (at least to the extent that strong rights are often broad rights as well). Indeed, identifying the bounds of your internally developed innovation may be no different than identifying the validity of an externally negotiated license.

35. See Burk & McDonnell, *supra* note 2, at 617.

36. The cost of contracting around these allocations is critical to the theory. To the extent these allocations can be contracted around costlessly, they will have little effect. Bar-Gill and Parchomovsky, *supra* note 2, assume these costs to be low in their models.

37. See Burk & McDonnell, *supra* note 2, at 619–20.

duction of that input would be organized in either scenario—they do not look to the question of how the inputs of the input are sourced.³⁸

When economic actors organize the production of unique ideas, something other than ownership of residual control is at play. Major inputs of unique ideas come from the human mind. Those mental inputs are often unobservable and unverifiable. Moreover, they are often uncontrollable, even by the person from whose mind they spring. The “creative spark” may not be entirely random, but it cannot be produced on a whim the way other productive inputs might be.³⁹ Thus residual control, to the extent it exists at all, is limited to the creator’s mind and cannot be transferred by contract or by obtaining property rights. Likewise, the law cannot allocate the rights that it cannot create.

Economists have noted that human capital can never be fully integrated as property.⁴⁰ This is especially true with the creation of ideas. While human labor may be unintegratable because the control cannot effectively be transferred from the worker to the firm,⁴¹ with idea creation the control does not even exist in the worker until the idea is fully formed. Solutions by integration of related assets or contractual agreements may be weak because even the creator is powerless to control or verify his inputs. Thus, the idea creators will at the moment of creation—even if involuntarily—retain the ability to hold up the firm. For example, the creator could withhold or misrepresent the state or characteristics of the idea in period two. And the true nature of this action is not observable ex post. The creator thus has the implicit threat to exit before the idea is transformed into a controllable form through either contract or property rights. Integration—in the residual control sense—will therefore not minimize the hold-up potential with relation to that asset.

Despite these challenges and incurable hold-up problems, idea creation is sometimes integrated—in a Coasean sense⁴²—into a large produc-

38. Arora & Merges, *supra* note 2, at 452; Ronald J. Gilson, *Locating Innovation: The Endogeneity of Technology, Organizational Structure and Financial Contracting*, 110 COLUM. L. REV. 885 (2010).

39. Any academic who has struggled with finding his next big idea knows this.

40. *See, e.g.*, Oliver Hart & John Moore, *Property Rights and The Nature of the Firm*, 98 J. POL. ECON. 1119, 1150 (1990).

41. There are some examples in the literature where integration or a close substitute can be achieved by some contractual arrangements. *See, e.g.*, 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”).

42. Coase did not view a firm as the ownership of residual control nor as a solution to a hold-up problem. Rather, he viewed the firm as the organization of production such that an entrepreneur (rather than the market) allocated resources. *See* Coase, *supra* note 1, at 393 (“A firm, therefore, consists of the system of relationships which comes into existence when the direction of resources is dependent on an entrepreneur.”); *see also* Ronald H. Coase, *The Nature of the Firm: Influence, in THE NATURE OF THE FIRM: ORIGINS, EVOLUTION, AND DEVELOPMENT* 61 (Oliver E. Williamson &

tion function. Creators sometimes become part of a team that is directed by hierarchical management. Because integration does no better than contract at curing hold up but still occurs in some instances, we need to look to different theories to explain the difference between integrated and unintegrated idea production.

Consider an extreme case: nearly all of the theorists in this field suggest that weak property rights in inventions will lead firms to integrate where they otherwise would purchase the intellectual property on the market.⁴³ But what if the invention is the product of one input—a unique idea in one person’s head? Regardless of the strength or weakness of property rights in that input, the “make” and “buy” options will look the same. The firm can try to buy the idea on the market. But it will face a classic disclosure paradox that will make price negotiation difficult. It can hire someone and pay them a salary to come up with the idea. But there again it will face the disclosure paradox that will make the salary negotiation difficult. Perhaps the disclosure problem can be overcome by drafting masterful confidentiality agreements, but the cost of drafting those agreements should not be substantially different with employees and outside contractors.⁴⁴ It may be that integration is impossible. In the very least, if there is a reason to integrate, it is not to gain residual control.

Moving incrementally away from the extreme cases begins to shed light on the variables that matter for the production of unique ideas. Notably, the strength of property rights is not at the top of that list. Things look very different if the invention is the output of various production inputs: perhaps a lab is necessary; perhaps only collaborative thought can produce the idea; perhaps reputational effects enable circumvention of the disclosure paradox. Those variations will determine the organization of the production function. The strength of property rights in the output plays a different role. The distinction might be thought of as the difference between asking whether a lab producing inventions will be integrated into the larger firm that uses the inventions and the question of how the lab itself will be organized.⁴⁵

Moreover, the unanswered question is often critical to the questions that the literature is attempting to answer. If the creative production function cannot be integrated into a module because of control issues, then integration into a development firm is also unlikely. For example, a mov-

Sidney G. Winter eds., 1993) (rejecting hold up as an explanation for why production is organized in firms).

43. See *supra* note 2.

44. Of course, the employment status might create different default rules or biases of judges.

45. Arora & Merges, *supra* note 2, at 452.

ie production is often created within a firm hierarchy.⁴⁶ Similarly, teen novels in a certain genre are increasingly being written by teams with a firm hierarchy.⁴⁷ Those modules might be easily integrated into the post-creation development firms if other considerations weighed in favor of that integration.⁴⁸ The same cannot be said where the nature of the idea creation is such that firms cannot be established. Certain types of literature seem to be produced by a market almost exclusively filled by individuals, rather than firms. I discuss another example in detail in Part IV where a comic book character was co-created by two major figures in the industry. The production function had no hierarchy and there was no integration at the idea-creation stage. If it were impossible to create a hierarchy at the creation state, it would also be impossible for a post-creation development firm to integrate the idea creation. For the same reasons that the comic book creators could *not create* a hierarchy, they *cannot be integrated into* a hierarchy.

The same distinctions might be found in other artistic fields. For example, “boy bands” might be easy to integrate into record labels while “rock bands” are difficult to integrate. But note that the difference between the boy band and the rock band is not about hold up and ownership of residual control. Justin Timberlake had as much hold up potential as Eddie Vedder. They had the same type of exit threat. Property rights and residual control of the important asset were the same. But ‘N Sync looked much more like a part of a firm than Pearl Jam. And so the property-rights theories leave the distinction unexplained.

In the remainder of this Essay, I illustrate the point by focusing on the production of ideas whose expressions are the domain of copyright. The rationale for this focus is twofold. First, copyright law and the major disputes in the area have received less attention by theorists of the firm. Second, while patentable inventions are overwhelmingly the products of myriad inputs including hard assets such as laboratories and equipment,

46. This is a firm in the Coasean sense that, even if not all inputs are legally owned by the same economic actor, the inputs are allocated at the direction of a hierarchical management structure. *See infra* note 88.

47. Alloy Entertainment and Paper Lantern Literature are examples of these firms. Alloy has created and written *The Sisterhood of the Traveling Pants*, *Gossip Girl*, and *The Vampire Diaries*, among others. Alloy’s beginnings can be found in the *Sweet Valley High* series. These companies are essentially firms that write teen novels. That particular production function will be discussed more in Casey and Sawicki, *supra* note 13.

48. Alloy Entertainment now produces the movies and television shows based on the books that it authors. Its webpage refers to itself as “a fully integrated entertainment company that develops and produces original books, television series, and feature films.” *About Alloy Entertainment*, ALLOY ENTERTAINMENT, <http://www.alloyentertainment.com/> (click on “About Us” tab) (last visited Apr. 13, 2012). Disney’s integration of content creation and post-creation development is another example.

there are still several classes of copyrightable material that are the product of inputs that are overwhelmingly creative products of the mind. Because these examples are more “purely mental” in that sense, they are more convenient for illustrating the point.

It also worth noting that by focusing on copyright law, limitations of existing theories quickly become evident. The production of copyrightable material is varied in its organization. Some books are written by firms, others are written by partnerships, and most are written by individuals. It is unlikely then that weak copyright laws would push the creation of literary novels into firms. Conversely, it is hard to imagine how strengthening copyright laws would have a negative impact on the success of firms like Alloy Entertainment who create teen novels within a firm.⁴⁹ Similarly, the integration of component inputs into movies and television shows vary across many dimensions. But none of these can be explained by relying on the strength or weakness of copyright law for the end product or for the component parts. If actors had the strongest of property rights in every visual moment they were on screen, what would change? Their contracts might look different and their compensation structure might be different. But it is hard to imagine that they would not still remain integrated into a firm hierarchy where they do the bidding of a director.⁵⁰ It is the nature of movie production, not the strength of property rights, that is the most prominent factor in the organization of that firm.⁵¹

Indeed, because virtually all of the value of a copyrightable work comes from disclosure, the disclosure paradox that is discussed in patent law has virtually no application to integration questions in the copyright world. In a world of weak copyright, integration does not solve the disclosure problem. The most secretive fully integrated firm could produce the novel, comic book, or movie with no leaks. But the moment they try to commercialize it, the ease of copying would destroy their ability to capture the value. The value of integration is lost upon first publication. So while theories of property rights facilitating market transactions might be relevant to whether an inventive laboratory is integrated (where re-

49. See *supra* note 7.

50. Of course some actors are of a high enough profile that they demand to be and become the de facto manager. But the general firm structure is the same in those instances—only the identity of the manager has changed.

51. The question of property rights in the image of an actor is not entirely hypothetical. And it raises other interesting questions for intellectual property law. See Douglas G. Baird, *Does Bogart Still Get Scale? Rights of Publicity in the Digital Age* (U. Chi. L. & Econ., Olin Working Paper No. 120, 2001), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=268516; see also *Wendt v. Host Int'l, Inc.*, 125 F.3d 806 (9th Cir. 1997). But these are likely to be of less importance to the question of how the production of the movie is organized.

verse engineering is costly) the same cannot be said for the production of copyrightable works.

From here, I proceed by way of examining two high-profile copyright cases: the Bratz dolls litigation⁵² and the Spawn comic book litigation.⁵³ These cases will be familiar to intellectual property lawyers and scholars. They raise several interesting issues of copyright law⁵⁴ and have received extensive analysis in this field. But the analysis from a theory-of-the-firm perspective has been scant. In filling that gap, I use these cases to uncover fertile ground for the application of theories of the firm to the law of idea production.

To be clear, I do not claim that no existing economic theory can be applied to this type of production function or that the competing economic theories of the firm are mutually exclusive. Some production functions can be explained by one theory, while others can be explained by different theories. The appropriate theory might differ depending on the question one is asking.⁵⁵ This Essay seeks to identify the particular questions that are implicated by the production of unique ideas and set the groundwork for the future identification and application of the appropriate theories to this area.⁵⁶

III. *MATTEL, INC. v. MGA ENTERTAINMENT, INC.*

Judge Kozinski opened the Ninth Circuit opinion in *Mattel, Inc. v. MGA Entertainment, Inc.* by asking, “Who owns Bratz?” That is the appropriate legal question in a copyright and trademark infringement lawsuit where the parties are suing each other for the future rights in and past profits from a product. The litigation and resulting opinion, as well as much scholarly analysis, provide answers. The question, however, for those concerned with the theory of the firm is more complicated: Who (if anyone) created Bratz?

Unlike Barbie dolls, Bratz are sassy dolls with big heads. As the court explained, “[T]he urban, multi-ethnic and trendy Bratz dolls have attitude.”⁵⁷ The problem—or at least the impetus for litigation—was that

52. *Mattel, Inc. v. MGA Entm’t, Inc.*, 616 F.3d 904 (9th Cir. 2010).

53. *Gaiman v. McFarlane*, 360 F.3d 644 (7th Cir. 2004).

54. For the purposes of this Essay, I treat the question of copyrightable works. Of course, much of the related product of those works are also eligible for trademark protection. For an analysis of trademarks and the firm, see Dan Burk & Brett McDonnell, *Trademarks and the Boundaries of the Firm*, 51 WM. & MARY L. REV. 345 (2009).

55. Ronald J. Gilson, Charles F. Sable & Robert E. Scott, *Contracting for Innovation: Vertical Disintegration and Interfirm Collaboration*, 109 COLUM. L. REV. 431 (2009); Holmstrom & Roberts, *supra* note 21, at 75.

56. That more elaborate undertaking is the goal of an ongoing project with Andres Sawicki. Casey & Sawicki, *supra* note 13.

57. *Mattel*, 616 F.3d at 907.

the man behind the Brat was Carter Bryant, a former Mattel employee who had designed fashion and hair for Barbie. What's more, the spark in Bryant's head that created Bratz occurred while he was still employed by Mattel. Similarly, his initial drawings and sculpts of the doll were constructed during that time period.

Bryant had by contract assigned to Mattel "all inventions . . . conceived or reduced to practice . . . at anytime during [his] employment" with Mattel. Bryant of course argued that the labor of creation (at least for the sculpts and the drawings) occurred off hours when his time was his own and not Mattel's. He also argued that the idea was not an "invention." The main disputes on appeal were thus classic questions of contract interpretation: (1) whether the during-employment language of the contract covered off-hours time, and (2) whether the term "inventions" included ideas. The Ninth Circuit found the terms to be ambiguous and remanded the case to answer these questions.⁵⁸

Contract disputes of this nature might suggest that the creative production of Bratz should be viewed through the property-rights lens of the firm. That view would be consistent with the existing literature on intellectual property and the theory of the firm, and it would assist in answering the court's "who owns" question. Mattel produces Barbie dolls and hires employees to help create and develop those dolls. Mattel and its employees make relationship-specific investments: Mattel trains its employees and reveals inside information to them about the production function, and employees spend time narrowing and deepening their skills to the creation of Barbie dolls. These investments lead to the potential for hold up in the future. Contracts may be costly to write or enforce and therefore incomplete by nature. Further, the parties could not contract over the specific rights in Bratz because neither saw the idea (or its immense value)⁵⁹ coming. The parties may structure the ownership of assets to correct for the potential of hold up. A theory of potential hold up might then inform the gap-filling exercise for contract interpretation.

Likewise, this property-rights lens might tell us something about the appropriate design of law. The strength of the intellectual property rights in the intellectual products⁶⁰ that Mattel and its employees create and the allocation of those rights (to either Mattel or the employee) will affect the cost of writing a contract about the production and ownership of the idea and the particular structures that will best address hold-up once the idea has been created. In particular, strong rights affect transac-

58. *Id.* at 917–18.

59. Bratz sales were in the billions of dollars at their peak. *Id.* at 911.

60. Here copyright and trademark law govern this grant.

tion costs,⁶¹ and the default allocation of rights affects the productive output and incentives in a world where transaction costs are not zero.⁶² These rights and allocations will therefore determine whether Mattel hires employees to come up with doll designs or simply solicits ideas on the market. If property rights are either too strong or too weak, market transactions are costly. But if allocation to employees is excessive or nonexistent, the costs of firm production will be costly.⁶³ Because the law can affect the structure on both the allocation and strength dimensions, the optimal rule (in the sense of encouraging the most efficient production) will have to get balance of things just right.

This is the Goldilocks hypothesis. If we get the porridge just right, we know how strong the rights in the Bratz idea, drawings, and sculptures should be and where those rights should reside. In other words, we know who owns Bratz. Of course, the allocation of rights could be by default rules, and we might import theories of altering rules to determine how hard it is for parties to contract around those default rules.⁶⁴ But the design of those altering rules will be informed by the same goal of getting the ultimate allocation just right.

We now have a theory for a firm that produces the physical Bratz dolls, but we still do not know who created the idea of Bratz. Depending on our assessment of hold-up threats, we can theorize whether the modular productive function creating Bratz should be integrated into the larger firm that develops and markets dolls (MGA or Mattel). That theory might also tell us how the law should allocate the default rights in Bratz between the creator and developer. But on closer look we do not have a theory for the (sub)organization of the firm that creates the idea of Bratz. We do not have a theory that looks inside that modular unit. This modular unit may just be Carter Bryant or even less than Carter Bryant—a corner of his brain. But it may be something more complex.

A couple counterfactuals will demonstrate the problem. First, what if Carter had never worked at Mattel? Would Bratz still have been invented? Probably not. Mattel was more than a potential marketer of Bratz. It was likely an immeasurable input into Bryant's creative process. The difficulty with ideas is that they are products of various and unidentifiable inputs. We can see this difficulty across other media as well. Dr.

61. See, e.g., Bar-Gill & Parchomovsky, *supra* note 2; Barnett, *supra* note 2; Merges, *supra* note 2.

62. Bar-Gill & Parchomovsky, *supra* note 2.

63. Bar-Gill and Parchomovsky question this analysis, particularly the assumption that allocation matters given that transaction costs are generally low. *Id.*

64. Ian Ayres, *Regulating Opt Out: An Economic Theory of Altering Rules*, 121 YALE L.J. (forthcoming 2012).

Seuss was asked in 1954 to write a book that would help children learn to read. He was challenged to write it using no more than 250 simple words. He rose to the challenge and wrote *The Cat in the Hat*, the eleventh best-selling children's book of that century.⁶⁵ A few years later, without being asked, he wrote a book with less than 50 simple words that became the sixth most popular children's book of the century.⁶⁶ It is worth asking if Dr. Seuss would have ever written *Green Eggs and Ham* if he had never been asked to write *The Cat in the Hat*? Examples of these unintended, uncontrollable, and immeasurable inputs are virtually infinite.⁶⁷

It may be that the collaboration of inputs, some inside and some outside the creator's head, will be of great importance in producing creative ideas. But the inputs within the head are often impossible to control, observe, or predict—even by the creator himself. While Dr. Seuss was able to produce *The Cat in the Hat* upon request, it was only after years of writing immensely popular children's books. The firm making the request had reason to believe he could do it.⁶⁸ Most creative inputs are not so reliable. Think about offering J. K. Rowling millions to write the first Harry Potter book on faith as compared to offering her millions to write the seventh. In both cases, the decision is clear, but the decision is different. If Mattel had wanted to create a billion-dollar product called Bratz, it had no reason to think Bryant would be the guy to hire for the job, and neither did Bryant.

From that angle, the problems in the Bratz litigation look like they are less about property rights and hold up than our original analysis suggested. The contract for Bratz was incomplete because the idea was unknown and uncontrollable. Nothing about integration into a firm could change that. Unless Mattel could get residual rights (including control) of Bryant's brain, integration in the property-rights sense is meaningless.

This leads to the second useful counterfactual. Imagine that we live in the "just right" world and have the perfect strength of copyright law and the perfect allocation of rights between firms and their employees. Who creates Bratz? The likely answer is no different than in any other world. Bryant comes up with the idea while working for Mattel, and he does it in the same way: a spark of inspiration, followed by secret development. Then, depending on the allocation of rights in his contract, he

65. The final book contained 236 different words.

66. See JUDITH MORGAN & NEIL MORGAN, DR. SEUSS & MR. GEISEL: A BIOGRAPHY (1995).

67. This phenomenon suggests that there is a great deal to be said about ideas and firms with regard to derivative works. Casey & Sawicki, *supra* note 13.

68. I am not suggesting that Dr. Seuss was part of a firm when he wrote *The Cat in the Hat*. The example is provided only to illustrate the complex interplay between intangible productive inputs.

either sells the idea for billions to MGA (or Mattel) right away or he hides the idea, quits, and waits until his contract terms have expired. These two outcomes arise because no one knew that Bryant could invent Bratz.⁶⁹ No one therefore could enter an ex ante contract for him to do so. Mattel did not hire him to create a sassy hip doll. They hired him to give Barbie a new hairdo. Property rights will not change the problems with ex ante contracting. If Mattel somehow gets all residual rights to every Bryant idea, Bryant will not produce Bratz, or he will but he will not disclose it unless he finds a way to hold up Mattel to extract the value of the idea. Any integration to optimally align hold up will fail because (1) the integration of Bryant by Mattel or Mattel by Bryant can never be achieved, and (2) the parties cannot answer the question of whose investment is more important for a project that is unconceived. Ex ante integration is essentially impossible for the same reason that ex ante contracting is incomplete. Moreover, both transactions—integration and contracting—are impossible to price.⁷⁰ The product is of no predictable value because it has no known characteristics.⁷¹ Because both forms of organization perform equally poorly on price discovery, we learn nothing about whether production will be done by firms or markets.

The take away for the law might be simple: Mattel would not hire someone to create Bratz just as a firm would not hire someone to create the first Harry Potter novel.⁷² And so the outcome of the case seems correct—if they did not hire him to do this, then they did not pay ex ante for the rights and should not get them. If we give the rights to Mattel, we will never get Bratz. Bryant will not spend the time on them because he will not be compensated, and Mattel will not compensate him because they do not know he has it in him. On the other hand, by giving the rights to Bryant, we might fear the opposite problem—that Mattel will not hire Bryant in the future. That outcome is unlikely. Mattel may try to protect

69. Merges, *supra* note 2, at 22–23 (explaining that “it is very difficult for the employee to assess what inventions he might be capable of making at this point”); see also Gorga & Halberstam, *supra* note 2, at 1164 (noting that individuals may not be aware of what they actually know).

70. Merges, *supra* note 6, at 1480 (noting the difficulty in pricing a transaction where the rights are not known prior to the exchange); see also R. H. Coase, *The Federal Communications Commission*, 2 J.L. & ECON. 1, 14 (1959).

71. Merges, *supra* note 2, at 22–23 (explaining that it is “difficult to predict contours of invention before hand”). In some cases this may not be true. Reputation and past performance can create reasonable value predictions.

72. The point is a little metaphysical. You could of course hire J. K. Rowling now to write the next great children’s series. That would be a reasonable gamble. But the point about Bratz and Harry Potter were that they were both created by unknowns. It might be said that that is a necessary existential characteristic of those particular ideas. We may avoid this for now with the basic intuition that it is highly unlikely that any firm could have instructed its employees to write a novel that would have turned out to be precisely *Harry Potter and the Sorcerer’s Stone*. The idea was in some real sense unique to Rowling.

itself more in the future. But someone has to style Barbie's hair. And Bratz was not conceived at the time of the contract. Mattel's real fear from the development of Bratz is not that it will miss out on profits from projects that it did not invest in or anticipate, but rather that such projects will cannibalize its own products. This fear will be addressed with non-competes.⁷³ But those non-competes may stifle the likes of Bryant from developing Bratz. So Bryant gets hired, but Bratz may still never get made. This is an incomplete contracts and hold-up problem. But it is one that cannot be solved by any form of integration as prior literature would suggest.

The ineffectiveness of integration and contract as solutions highlights the real problem posed by the Bratz dispute. Spontaneous collaboration between inputs may be valuable. Barbie's and Bryant's minds need to come together to create Bratz. As long as we have a rule that does not prevent spontaneous collaboration from happening, the law may be satisfactory. But the law might go further and encourage collaboration or make it easier to overcome the Bratz problem. Whether that is possible is another question. The law may be as powerless as markets and firms. As demonstrated in *Mattel, Inc. v. MGA Entertainment, Inc.*, the value of collaboration can be difficult to measure and capture when the production function is uncontrollable and unpredictable, and this is especially true when—as with Bratz—the parties are unaware of the value of collaboration. The problem still exists, however (and the law might have more of a role to play), when the parties are conscious of the value of collaboration. This can be seen in the *Spawn* case addressed in the next section.

IV. *GAIMAN V. MCFARLANE*

Gaiman v. McFarlane presented different copyright problems and implications for firm boundaries.⁷⁴ Todd McFarlane and Neil Gaiman had collaborated to create a new set of characters for the *Spawn* comic book series. McFarlane, the creator of *Spawn*, ran his own publishing house, and beyond creating and publishing the series and character of *Spawn*, McFarlane also wrote and illustrated the series. Early in the life of the series, he hired four top-reputation writers, including Neil Gaiman, to each write for one issue of *Spawn*. Contrary to the situation with Bratz—where Mattel hired Bryant to design for Barbie before anyone conceived of Bratz—McFarlane hired Neil Gaiman because of his talent

73. Bar-Gill & Parchomovsky, *supra* note 2.

74. *Gaiman v. McFarlane*, 360 F.3d 644 (7th Cir. 2004).

and reputation.⁷⁵ Think Dr. Seuss at the time of *The Cat in the Hat* or J. K. Rowling after the first Harry Potter book rather than before it. Asking Gaiman to write a great comic book was a bet, but it was a good bet. More importantly, it was a measurable one with less uncertainty.

Additionally, Gaiman's work was more controllable and more verifiable. He was not hired to create a new comic book. He was hired to create a derivative work: an episode in a series. The characters in that episode would be informed by the existing characters. They had to fit within the motif of the series. Gaiman thus took the character of Spawn⁷⁶ and updated it to contribute to the idea for a new Medieval Spawn and two other characters who would interact with Spawn and his existing universe (Angela and Count Cogliostro).

Notably, Gaiman did not create this episode alone. The further development and expression of Medieval Spawn was collaborative and involved both McFarlane's ideas and illustration. It was conscious collaboration, a team production. The resulting issue sold over a million copies. The character of Angela featured in her own spin-off series, and the three characters became the material for toys and other merchandising.

Unlike Mattel and Bryant, Gaiman and McFarlane had no written contract. Rather, they had an oral agreement with few details, which led to a dispute about the specific rights between them. Gaiman claimed a copyright in the characters he created. McFarlane defended on claims either that the characters were not copyrightable or that Gaiman's contributions were not copyrightable. The Seventh Circuit rejected these defenses, as well as the idea that the characters might belong to McFarlane under the works-made-for-hire rule, as Gaiman was not an employee of McFarlane's.⁷⁷

Again the court was faced with the question of who owns the product (Medieval Spawn). But this time the question was more obviously tied to the question of who created Medieval Spawn.⁷⁸ The answer—that Medieval Spawn was co-created—obligated the court to parse through what exactly co-created meant for the strength and allocation of the copyright.

75. *Id.*

76. Judge Posner gives a full history of what and who Spawn is in the Seventh Circuit opinion. *See id.* at 649.

77. The argument was rejected even though it was not raised by the parties. *Id.* at 650.

78. Other copyright questions arose as well, but the court squarely faced the foundational question of who produced the creative product. *See id.* at 658–60.

A. Property Right: An Incomplete Theory

For our analysis, it is useful to begin again by assuming the porridge is just right. If the copyright in Medieval Spawn is clear and strong (in the end it was) and if the law gets the default rule on allocating a copyright between an employer and an employee just right, how does that affect the organization of the creation of the idea for Medieval Spawn? It does not. Looking at this case from a property-rights theory does not get us very far.

Gaiman was not an employee of McFarlane. Their relationship was an amorphous partnership. This is likely the case because *ex ante* they did not have a meaningful sense of what the end product would be or what role each of their respective inputs would play in creating that product. They could not *contractually* allocate the rights in the non-existent idea. But that is true because the idea was unverifiable and unidentifiable, not because it was subject to weak or strong property rights. Indeed, under the prevailing theories, the fact that Gaiman's idea inputs could not be protected by any property right would suggest that the production of that idea would be integrated into a firm. But that integration is impossible. Similarly, the allocation of property rights (if they existed) between employee and employer would not change the production function. Gaiman and McFarlane do not avoid a hierarchy (nor do they disintegrate their partnership) just because the law allocates property rights to their ideas in one or the other of them. The structure of their relationship therefore stems not from the contours of property rights but from the dynamic of collaboration necessary to produce Medieval Spawn.

Indeed, the contract they entered was telling. They were free to devise any variation of allocation right for the ideas they produced or for the ownership of Medieval Spawn. But the unverifiable nature of the inputs they were contributing made contracting (and integrating) difficult. Gaiman and McFarlane faced the classic disclosure paradox with *the idea* of Medieval Spawn. Gaiman could not disclose the mere idea because ideas are not protected by intellectual property law. The existing theories of intellectual property and the firm all suggest that that lack of protection will lead to a vertical integration. McFarlane will not be able to purchase the idea of Medieval Spawn on the market, so he will create it himself. The property-rights theories do not suggest that McFarlane will enter a collaborative partnership with Gaiman not knowing if he has a good idea. Conversely, Gaiman should have simply hired an illustrator and produced his own comic book.

McFarlane and Gaiman nonetheless entered a market transaction even though (and in some sense because) intellectual property rights in *the idea* were weak. They presumably attempted to circumvent the dis-

closure paradox by way of reputation and trust. They did not know they were contracting for Medieval Spawn, but Gaiman's past performance made it possible to expect that Gaiman's mental inputs combined with the existing *Spawn* franchise would produce valuable output. And, even if control was impossible, the derivative nature of the project allowed for some ex post verification. McFarlane could at least judge in a binary sense whether Gaiman created a *Spawn* episode. Though they did not agree on a price term, they may have been able to put a price on the probability of the episode being a success.

The barriers to contract (and integration) arose from lack of control and observability. McFarlane could not tell Gaiman what to create—if he knew what to create, he would not have needed Gaiman. Directing and monitoring Gaiman to come up with his “best” or a “great” idea would have been futile because there was no way to verify his effort or if he was saving good ideas for other projects. The best they could do was to rely on each other's reputation. In that way, a firm would have provided no benefit over a market transaction. Notably, things would not have been structured differently if the copyright in *the end product* was weaker. The weakness or strength of that property right simply affects whether the production function in this case is undertaken, not how the parties structure the production. Weak copyright law does not encourage vertical integration because integration does not solve the disclosure problem. The comic has to be disclosed to the customer and copying is cheap. No amount of integration can solve that problem. Thus, if Medieval Spawn garners no copyright protection, McFarlane and Gaiman have less incentive to create him, but the structure of their relationship is unchanged.

McFarlane and Gaiman's market transaction was a failure in some ways. They created value but the non-hierarchical partnership fell apart before all of its value was harnessed.⁷⁹ This does not, however, provide support for the property-rights theory. Gaiman did not try to stop the publication of *Spawn*. Neither did McFarlane kill off Medieval Spawn or write some storyline that made him unusable in future episodes (incidentally, it is not clear if one can actually kill off a Spawn). Instead, they both claimed ownership of Medieval Spawn in period two, thus creating a hold-up problem. It may be viewed as opportunistic of Gaiman to claim a substantial ownership in Medieval Spawn, and McFarlane might have changed his ex ante investment level in fear of that claim. But even if that is the case, the hold-up problem is not solved by the allocation of property rights.

79. This is a familiar ending. The disintegration of creative partnerships is a common theme in shows and movies documenting the history of bands and other artistic groups. Casey & Sawicki, *supra* note 13.

B. Team Production

The contours of the relationship are clearer if we start instead from a team-production theory. Firms add value to team production precisely because the market is bad at structuring teams.⁸⁰ The team production scenario is one where the different actors provide inputs, but the output is not separable and the share of output value cannot be allocated to each input.⁸¹ A hierarchy does better because it is flexible and responsive to continuous monitoring of the ratio between all inputs and outputs. As Margaret Blair and Lynn Stout point out, the hierarchy can provide a benefit to the team members by mediating their relationship.⁸² This mediation allows for the suppliers of those inputs to renegotiate and fill in the gaps of their incomplete contracts as the project is carried forward, and they do this by allowing another party to exercise control over the web of relationships. It is not important that the party with the right investment incentives own residual control. Rather, it is important that the director of the hierarchy can respond to changing circumstances and redirect the production function accordingly (without renegotiating every contract).⁸³ In fact, some have pointed out that it is better that the director not own any assets at all.⁸⁴

This team scenario was somewhat present between Gaiman and McFarlane. Both were contributing inputs to the firm, and the productive share of the output for those inputs was immeasurable. But unlike a team, they never placed anyone at the helm. They attempted a team production without investing any authority into the project. The investment of that authority would have created a firm.

While a firm may have held benefits for McFarlane and Gaiman, its creation may have been impossible. Any *ex ante* pricing or effort allocation by contract is likely to be imperfect, and a set price or profit sharing for Gaiman's time will potentially lead to shirking by Gaiman or McFarlane. Team production theories suggest that firms can reduce these problems. But when effort is *entirely* unobservable and undirectable, the

80. Alchian & Demsetz, *supra* note 1, at 777; Margaret M. Blair & Lynn A. Stout, *A Team Production Theory of Corporate Law*, 85 VA. L. REV. 247 (2001).

81. *See supra* note 80.

82. Blair & Stout, *supra* note 80, at 274.

83. The question of how to monitor the monitor is of course a big one for team production theorists. This brings with it all of the questions about agency costs of management. Some have suggested that the norms, reputation, and the concept of trust must be playing a large role. Blair & Stout, *supra* note 80; Margaret M. Blair & Lynn A. Stout, *Trust, Trustworthiness, and the Behavioral Foundations of Corporate Law*, 149 U. PA. L. REV. 1735 (2001). It certainly seems plausible that in examples like movie production the input suppliers are relying heavily on the reputation of and trust in (or perhaps faith is a better term) the managers at the top of the hierarchy.

84. Raghuram Rajan & Luigi Zingales, *Power in a Theory of the Firm*, 113 Q.J. ECON. 387, 422-24 (1998); Blair & Stout, *supra* note 80.

managers of a firm add little. Perhaps Gaiman and McFarlane were not at the extreme of total undirectability, but the director likely would have had great difficulty in adding any value. Perhaps the parties recognized the low value of a director here. Their contract had few terms. In a way, recognizing the weakness of contract in pricing their transactions, they created the space for team production. They created a flexible relationship that was not bound by a web of contracts. And neither placed a claim on the residual value of the project. But, perhaps recognizing the limitations of management as well, they created a team with no coach. A firm with no hierarchy is not really a firm.⁸⁵

Perhaps the only thing a director could do was ex post valuation, but contracts can do nearly as well at ex post valuation. In that sense the court serves a similar function: a vague contract with a “reasonable price” term is basically an invitation for the court to step in for the director and do an ex post valuation for the parties. The real value in a team director is when adjustments can be made in real time during the process. And a director of McFarlane and Gaiman may not have been able to perform that function. Herein lies the distinction in developing a theory of the firm for these creative ideas. There may have been value to creating a firm, but they did not create a firm because it was not possible or it was prohibitively costly. Some inputs are unobservable and unverifiable (even by the person who is providing the input). A director monitoring and allocating worker behavior for moving a box, or providing manpower to move a boat,⁸⁶ can at least reward and direct employees in a way that causes them to give roughly the correct input. The ability to monitor and allocate quickly without renegotiating all other contracts and with the trust and faith of the team is central to a team-production theory. But if the employee is sitting in a room waiting for a great idea to come to him, hierarchical direction may not do anything to make the idea better. It may even make it worse.⁸⁷ Likewise, the market is not much better at directing inputs. Thus, when production is uncontrollable, contracts will be incomplete, but they will be incomplete in a way that firms cannot fix

85. Érica Gorga and Michael Halberstam seem to disagree with this Coasean view of firms. They suggest that where knowledge is embedded within individuals, firms will be the more likely organization of production, but centralized governance by hierarchy will be less likely (because less effective). Gorga & Halberstam, *supra* note 2, at 1123. It is difficult to square these two conclusions. If firms are hierarchies of centralized governance, then the benefit of a firm without hierarchical central governance is unclear.

86. See Cheung, *supra* note 41.

87. The imposition of directorial control, for example, may crush the creative juices. See, e.g., Arora & Merges, *supra* note 2, at 452 (“In a separate firm, the *esprit de corps*, of the S group will not be diluted by the presence of an overarching corporate structure, with its inevitable costs in the form of bureaucratic hassles.”).

by integration. Where the firm structure adds nothing, we expect production to proceed by market transaction or not at all.

The analysis in this section may not tell us a great deal about how the Spawn dispute should be decided, but it highlights important questions for those concerned with the-law-and-the-firm theories. To the extent team production is valuable for ideas to be created, but difficult to facilitate by contract or firm structure, legal scholars and lawyers have a clear problem to address.

V. CONCLUSION: TOWARD A THEORY OF FIRMS AND IDEAS

In the extreme case, when the production is entirely uncontrollable, no transaction occurs; only that which can be produced by one individual will be created. This individual production process is how literary novels are usually written.⁸⁸ Close to this extreme is the Bratz production function, which occurred predominantly in Carter Bryant's head. As evidenced by the Spawn case, as the value of collaboration increases or as control becomes marginally more feasible, market transactions (or attempts at them) will spring up. The lack of control made collaboration risky and made structuring that collaboration costly, but the benefit was high enough that Medieval Spawn was produced. One can imagine though that the benefits of team production directed by hierarchy—if it had been feasible—might have been many times more valuable.⁸⁹ One can also imagine that the lessons of the contract dispute over Medieval Spawn will cause artists to avoid collaboration in the future unless they develop some contractual or organizational solution.⁹⁰ In any event, when the possibility of control is small, firms will not be used to structure production. Firms are by definition institutions of control.⁹¹ Thus, where only minimal control is possible firms cannot exist. In the opposite extreme, control is costless and the slightest value of directed collaboration will justify the hierarchy of a firm.

Control is of course a sliding scale. In the middle, the more collaboration is involved in a creative project, the more value can be gained by hierarchical direction even where several of the inputs are creative and control is difficult. Put another way, the more value comes from the coordination of the team, the more likely the value is to outweigh costs of uncontrollability. Movie production seems to fit that description. The

88. Casey & Sawicki, *supra* note 13.

89. For one thing, the team might have survived long enough to produce more issues, more characters, and more spin-offs. Indeed, subsequent litigation has surrounded the value of further characters derived from Medieval Spawn.

90. Malani & Holden, *supra* note 32.

91. As noted above, Gorga and Halberstam seem to disagree with this. *See supra* notes 2 & 85.

actors, cinematographer, sound department, and so on all work as a team under the hierarchical supervision of the director and producers. On the other side of the equation, as the costs of control rise or fall, integration becomes more or less feasible. Thus, as the inputs become less creative and less isolated in the human mind, integration will be easier.

In the movie production, this analysis may explain why the script is often written outside the firm. The cost of controlling the author's spark is high, and the benefit of integrating her into the team is low—much lower, say, than the benefit of integrating the cinematographer and the actor into the firm.

Throughout this Essay, I have discussed the question of control over the actual production of ideas. Of note, that control can be achieved only by contract. The primary limitation of a property-rights theory in analyzing this production is that it posits firms as a solution to incomplete contracting. But with the production of ideas, ownership of residual control cannot be achieved. And yet, we see entities that we would call firms (at least in the Coasean sense) performing this productive activity. Those firms will arise when control can be achieved and collaboration is valuable. But because control is achieved through contract, the firm is not a substitute for contracting but rather a result of contracting. Improvements in contracting facilitate the collaboration that can be achieved through creating a firm with a manager to direct team production. Thus, in stark contrast to the result predicted by a property-rights theory, when contracts become more complete, we will see the size and number of firms creating ideas increase rather than decrease.

There is of course room here for lawyers to add value. Contractual innovation that can bind people in ways that do not encourage shirking and can provide monitoring opportunities that do not currently exist will be of great value. I do not attempt to suggest those innovations or solve that greater problem. Rather, my goal has been to (1) identify the problem as an area ripe for solutions developed from legal design engaged with theories of the firm, and (2) suggest that team production theories are a much closer fit for analyzing actual idea creation than the theories that have been applied to intellectual property in the existing legal scholarship.⁹²

92. In our follow up piece, Andres Sawicki and I take this problem on head on. We also suggest that some potential examples of solutions could be found by digging deep into the various structures of the publishing industry.