

Loyalties v. Royalties

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Friendship rewards us with a bond of loyalty and equality. The marketplace rewards us based on what we have to offer. When friends work together to create something, and when the market judges their creation to have value, this sets up a clash between realms. Should the pie of profits be sliced according to the values of friendship or the values of the marketplace? The answer matters for policymakers concerned with creative incentives. How satisfied people are with their monetary rewards can turn more on how much others are getting—their relative rewards—than on the absolute amount received. Nevertheless, it is the latter that has been the focus of empirical legal studies casting doubt on the central premise of copyright law—money motivates creative output. But relative rewards have not been addressed. This Article closes the gap, making three contributions that advance empirical research on copyright law and the psychology of creative incentives. First, I present empirical evidence of a link between creators’ relative rewards and the quality of creative output, providing support for the incentive theory of copyright law. Second, I argue that the joint authorship rule on license proceeds is an area of copyright law that gets creative incentives right. Third, my findings suggest the cross-industry uniformity of copyright law’s approach to relative rewards is leaving value on the table. I identify a certain social context—prior friendship—as an important predictor of creators’ relative reward preferences that can inform the design of industry-specific incentives.

These insights are drawn from regression analyses of a novel dataset built around a creative relationship central to the music industry: songwriting in music groups. The data span sixty years and comprise 1,000 music groups, each of which has earned at least one Gold Record. The first study reveals that groups that share royalties pro rata, even when some members’ contributions are small, produce songs that garner more Grammy Awards and earn higher revenue than groups that channel royalties to major contributors. What consideration is outweighing economic self-interest in songwriters’ royalty split decisions? The second set of studies identifies a key predictor through a preregistered experiment with over 600 participants and further analysis of the Gold Records dataset. Prior friendship—specifically friends’ desire for equal standing with one another—is essential to understanding songwriters’ relative reward preference for pro rata splitting. Loyalties trump royalties. My findings suggest that the predominance of prior friendships among collaborating songwriters drives the industry-level

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equal-splitting norm uncovered in my prior work. The insight that copyright industries differ, in terms of predictable relative reward preferences, supports the viability of an industry-specific approach to joint authorship rules. While predictable, co-songwriters' judgments about fair reward distributions are socially contingent—in stark contrast with a central premise of modern moral and political theory that morality is concerned with values and obligations owed to all persons equally. This suggests some limits on the evidentiary role moral psychology can play in nonutilitarian accounts of authors' rights. These relative reward insights into copyright law's monetary incentives may extend to coinventorship in patent law and beyond intellectual property to corporate ownership structure, such as startup founder equity splits.

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INTRODUCTION

The punk rock band The Clash achieved chart-topping success with musical demands for economic equality: “We don’t want no gangboss, We want to equalize.”¹ But not all band members benefited equally from that success. Despite their calls to eliminate hierarchy and inequality, the band itself was both hierarchical and unequal. Members were de facto divided into two classes: those who received songwriting royalties² and those who did not. Such class distinctions are not uncommon in music groups, but are far from the rule. Most groups do split royalties equally, even when their members contribute very unequally to the songwriting process.³ And as with The Clash, equal splitting of groups’ royalty distributions is not traceable to political messaging in their music, from the dark-pop Billie Eilish (“I’m gonna run this nothing town, watch me make ‘em bow”⁴) to the apolitical, electric-indie Cherub (“doses and mimosas, champagne and cocaine”⁵). In this Article, I argue that groups’ choice cannot be explained by economic self-interest, even as a long game, or by altruism. Instead, songwriters’ pattern of equal splitting is rooted in an expectation of a certain relative standing, specifically equal standing, with a certain category of person—friends.⁶ And at scale, their private reasoning has policymaking implications.

The question of how royalties ought to be divided matters for copyright law policymakers for two reasons. First, royalties are financially consequential

1. THE CLASH, *The Equaliser*, on *SANDINISTA!*, at 00:45 (CBS Records 1980). The Clash’s forfeiture of royalties to ensure that the three-disc album was sold for the cost of a single disc was taken as evidence of the band’s willingness to preserve the punk ethos even when signed to a major label. See Rob Sheffield, *In Praise of ‘Sandinista!’: Why the Clash’s Triple-Album Mess Is Also Their Masterpiece*, ROLLING STONE (Feb. 1, 2021), <https://www.rollingstone.com/music/music-features/rob-sheffield-clash-sandinista-tribute-1121704/>. This album achieved Gold status in 1999. *Gold & Platinum*, RECORDING INDUS. ASS’N OF AM., https://www.riaa.com/gold-platinum/?tab_active=awards_by_artist#search_section (last visited Feb. 23, 2023).

2. In this Article, “songwriting royalties” refer to all royalties derived from ownership shares in a song, rather than in the recorded performance of that song. Songwriting royalties include: (1) *public performance royalties*, royalties paid to songwriters and publishers for the public performance of a song that are administered by performance rights organizations (PROs) and determined through contract; (2) *mechanical royalties*, royalties paid to songwriters and publishers for the mechanical reproduction or digital performance of a song that are defined by statute; and (3) *sync royalties*, discussed below. The sound recording (“master”) itself has a separate set of royalties. For a comprehensive discussion of royalties related to songwriting, see DONALD S. PASSMAN, *ALL YOU NEED TO KNOW ABOUT THE MUSIC BUSINESS* 225–50 (10th ed. 2019).

3. Sarah Polcz, *Co-Creating Equality*, S. CAL. L. REV. (forthcoming) (manuscript at 3–4), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3898273.

4. BILLIE EILISH, *You Should See Me in a Crown*, on *WHEN WE ALL FALL ASLEEP, WHERE DO WE GO?* (Darkroom/Interscope Records 2019). “Billie Eilish” is a sibling duo marketed as a solo female artist. Alexa Sutherland, *Finneas: More Than Just Billie Eilish’s Sibling – All About the Expert Songwriter and Music Producer*, HOLLYWOOD INSIDER (Oct. 9, 2021), <https://www.hollywoodinsider.com/finneas-billie-eilish/>.

5. CHERUB, *Doses & Mimosas*, on *MOM & DAD* (Columbia Records 2012). The song achieved Gold status as a single in 2017. *Gold & Platinum*, *supra* note 1.

6. This includes friendships between siblings.

for musicians.⁷ For many musicians, songwriting royalties are their retirement plan, or even an asset class they can borrow against in times of need⁸—but only if they are credited as songwriters and thus entitled to royalties. Second, and the focus of this Article, is that the way our compensation stacks up against that of those we labor alongside—our *relative rewards*—can influence our satisfaction more than the absolute amount we receive. The design of relative financial rewards is therefore relevant to copyright law’s aim of incentivizing creative output.

The theory that financial rewards can incentivize creative productivity is the traditional utilitarian justification for copyright law. But recent empirical studies have rattled scholars’ confidence in the theory’s soundness. A common sentiment is that the burden of proof has shifted and that—given copyright’s social costs—evidence ought to be supplied that copyright law serves its intended purpose. Two central components of the search for this evidence are (1) more empirical work to better map where copyright’s existing incentives benefit creativity and where they do not, and (2) more copyright-relevant, fundamental research on creative incentives.⁹ Across three studies, this Article contributes to both objectives, using songwriting as a case study.

First, in contrast to recent studies that have found copyright’s monetary incentives to be either irrelevant or detrimental to creativity, this Article is the first to identify an existing incentive design, looking at U.S. law, that works. To do so, I extend the conceptualization of monetary incentives in the copyright incentives literature to include relative financial rewards, drawing new connections with joint authorship jurisprudence and scholarship. Copyright law’s rules for recognizing and rewarding joint authors function as relative reward incentives, though this Article is the first to explicitly theorize them as such. The joint authorship default rules entitle lesser contributing coauthors to share equally in authorship’s rewards.¹⁰ Unlike the primary focus of prior empirical incentives studies—the potential monetary rewards channeled to creators through the limited monopoly they are granted by copyright—the economics of copyright’s equal-split default are transparent to creators. Consequently, their incentivizing effects on productivity are comparatively easier to impute from real industry data introduced in the first study. The first study presents regression analyses of a music industry dataset I assembled, covering 1,000 music groups with Gold Records certified by the Recording

7. Authors of a joint work are by default equal owners of that work. 17 U.S.C. § 201(a). Here, I refer to an equal share of royalty proceeds alternately as “equal coauthorship credit,” “equal royalty splitting,” and “pro rata royalty splitting.”

8. See Anne Steele, *In Bad Times, Artists Leverage Royalties*, WALL ST. J., July 2, 2020, at B4.

9. See Christopher Jon Sprigman, *Copyright and Creative Incentives: What We Know (and Don’t)*, 55 HOUS. L. REV. 451, 477 (2017).

10. See PAUL GOLDSTEIN, GOLDSTEIN ON COPYRIGHT § 4.2.2, at 4:27 (3d ed. 2005 & Supp. 2022), Westlaw (“Each co-owner’s share of license proceeds will be measured according to a principle of strict equality, and will not be proportioned to the quantity or quality of each co-owner’s contributions to the joint work.”).

Industry Association of America (RIAA) over sixty years (from 1959 to 2021).¹¹ I examine correlations between the royalty-sharing decisions of co-songwriters in music groups and the quantity (number of albums) and quality (sales, Grammy awards) of their songs. Received doctrine holds that sharing royalties equally, with lesser contributors, disincentivizes greater contributors from collaborating or putting forth their best efforts.¹² The results are inconsistent with that claim. Music groups whose splits align with the existing default rule have higher sales and more Grammy awards. This finding points to a concrete step for copyright policymakers: pushing back against the erosion of the “equal split” rule. The discussion in Part III proposes how this can be done without departing dramatically from existing law. The equal split rule is not an inefficient norm, despite running counter to the economic self-interest of those songwriters who contribute the most to cowritten songs.

Second, a set of studies sheds light on what consideration is outweighing such economic self-interest, making a contribution to fundamental research on creative incentives and the psychology of equality.¹³ These studies include a preregistered, blind-analyzed experiment with over 600 participants and further analysis of the Gold Records dataset. The results reveal that prior friendship is essential to understanding co-songwriters’ relative reward preference for pro rata splitting. By far the strongest predictor of whether lesser contributors get to be coauthors is their prior relationship. If they were friends in advance of forming the group, all contributors tend to be coauthors and to split royalties equally; if they met only when forming the group, lesser contributors are unlikely to be coauthors. The essential variable is their friendship status at the moment the group was formed. For members who were friends before forming the group, loyalties trump royalties. The difference that prior friendship makes to royalty-assignment decisions holds regardless of genres, spanning the spectrum of musical tastes from Norteño to heavy metal to contemporary Christian to hip hop. Moreover, the predominance of prior friendships among collaborating songwriters drives the industry-level equal-splitting norm. My findings—that the distributive preferences of friends are predictable and that friendships are predominant in certain creative fields such as songwriting—support an industry-specific approach to recognizing joint authors and determining their entitlements.

11. Data was compiled for greater than 94% of these groups.

12. See sources cited *infra* notes 39–49.

13. The conventional approach to thinking about parties’ motivations and preferences when making contracts, even informal agreements involving songwriting credits, has focused on the economic nature of the relationship between collaborators, assuming that creators are motivated primarily by money. See Russell B. Korobkin & Thomas S. Ulen, *Law and Behavioral Science: Removing the Rationality Assumption from Law and Economics*, 88 CALIF. L. REV. 1051, 1066 (2000) (“Nearly all law-and-economics literature on business organizations . . . is built on the explicit or implicit assumption that firms seek to maximize profits. And much law-and-economics literature on individual behavior makes an analogous assumption (usually implicitly), at least in circumstances in which money is at stake.”).

Songwriters implicitly want a certain kind of standing—equal standing—with a certain kind of person—friends. Distributing royalties equally, even when contributions are uneven, creates a dimension of equal standing and reinforces the desired relationship structure. By the same token, a failure to equally distribute the profits from jointly written songs undermines an expectation of equal standing among friends. Our motivations and expectations for friendships, including loyalty and equality, are grounded in mutual affection and identification—private wellsprings that cannot be opened up for the benefit of all, even in principle. The special moral obligations implicit in friendship are at odds with a central premise of modern moral and political theory: that morality is concerned with values and obligations owed to all persons equally.¹⁴ That tension may play a role in explaining why friendship has been understudied by moral philosophers and legal theorists despite its centrality to our everyday lives.¹⁵ This Article reverses this trend of omission by demonstrating that the effects of social context on economic decisions, such as royalty splitting, are far from mere noise.

Part I reviews the empirical work to date, testing the incentive theory of copyright law, and draws new connections between the incentives literature and joint authorship jurisprudence. Part II presents the studies. Subpart A investigates the relationship between royalty sharing and creative productivity (Study 1). Subpart B posits that prior friendships between collaborators can explain songwriters' preference for equal royalty splitting, using the theoretical framework of Relational Models Theory. This hypothesis is tested in the experiment of Subpart C (Study 2), and the music industry data of Subpart D (Study 3a); the consequences for creative production are also investigated in Subpart D (Study 3b). Part III discusses the implications of these insights on the effects of social context on cocreators' reward preferences in the context of copyright law, and potentially beyond.

I. COPYRIGHT CONTEXT

The goal of American copyright law is to promote a certain kind of social utility: “the progress of Science and useful Arts”¹⁶ by increasing the quantity

14. See generally, e.g., Joshua Rothman, Editorial, *The Equality Conundrum*, THE NEW YORKER (Jan. 6, 2020), <https://www.newyorker.com/magazine/2020/01/13/the-equality-conundrum>.

15. This is not to say that friendship has been overlooked in legal scholarship, particularly in the works of Professor Ethan Leib. See generally, e.g., ETHAN J. LEIB, FRIEND V. FRIEND (2011); Ethan J. Leib, *Friendship & the Law*, 54 UCLA L. REV. 631 (2007). Other scholars have also made notable contributions to the study of the role of friendship in law and vice versa. See generally, e.g., Peter Goodrich, *Laws of Friendship*, 15 L. & LITERATURE 23 (2003); Michael J. Kaufman, *The Value of Friendship in Law and Literature*, 60 FORDHAM L. REV. 645 (1992).

16. U.S. CONST. art. I, § 8, cl. 8.

and quality¹⁷ of creative works and promoting their dissemination.¹⁸ The design of copyright law is premised upon a motivational theory: the belief that money is an important motivator for creative activity.¹⁹ On this basis, copyright law aims to stimulate creative production by increasing the potential profit authors stand to derive from their works and ensuring they have an incentive to create despite frequent upfront costs. Specifically, copyright law protects authors' works from competition—prohibiting others from copying and selling versions of their works—for a term that has been repeatedly extended and now stands at the lifetimes of the authors plus seventy years for most works not made for hire.²⁰

17. For a contemporary formulation, see generally Glynn S. Lunney, Jr., *Copyright's Excess Revisited*, 6 TEX. A&M J. PROP. L. 59 (2020). Given the difficulty of arriving at an objective definition of quality, most theories of copyright law have focused on a "more is better" approach. See Christopher Buccafusco & Jonathan S. Masur, *Intellectual Property Law and the Promotion of Welfare*, in 1 RESEARCH HANDBOOK ON THE ECONOMICS OF INTELLECTUAL PROPERTY LAW 98, 109–10 (Ben Depoorter & Peter S. Menell eds., 2019).

18. See *Fogerty v. Fantasy, Inc.*, 510 U.S. 517, 526 (1994) ("[The purpose of copyright is] promoting broad public availability of literature, music, and the other arts." (quoting *Twentieth Century Music Corp. v. Aiken*, 422 U.S. 151, 156 (1975))).

19. See *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 429 (1984) ("[Intellectual property law] is intended to motivate the creative activity of authors and inventors by the provision of a special reward . . ."); Christopher Buccafusco, Zachary C. Burns, Jeanne C. Fromer & Christopher Jon Sprigman, *Experimental Tests of Intellectual Property Laws' Creativity Thresholds*, 92 TEX. L. REV. 1921, 1924 (2014) (outlining the utilitarian justification for copyright); Pamela Samuelson, *Regulating Technology Through Copyright Law: A Comparative Perspective*, 42 EUR. INTEL. PROP. REV. 214, 216 (2020) ("The dominant justification in the US for the grant to authors of exclusive rights to control exploitations of their works is utilitarian."); William M. Landes & Richard A. Posner, *An Economic Analysis of Copyright Law*, 18 J. LEGAL STUD. 325, 326 (1989) ("For copyright law to promote economic efficiency, its principal legal doctrines must, at least approximately, maximize the benefits from creating additional works minus both the losses from limiting access and the costs of administering copyright protection."). For an empirical treatment, see generally Michela Giorcelli & Petra Moser, *Copyrights and Creativity: Evidence from Italian Opera in the Napoleonic Age*, 128 J. POL. ECON. 4163 (2020). The appropriate scope of financial incentives in copyright, and indeed whether financial incentives are a motivator of copyright work creation at all, has been the subject of vigorous and ongoing scholarly debate. These critiques are often rooted in the lack of solid empirical support for the incentive theory of copyright. See generally, e.g., Robert P. Merges, *Against Utilitarian Fundamentalism*, 90 ST. JOHN'S L. REV. 681 (2016) (arguing against empiricism as the sole source of intellectual property law). Scholars have documented the importance of intrinsic incentives as motivators for many creative individuals and teams. See, e.g., Jeanne C. Fromer, *Expressive Incentives in Intellectual Property*, 98 VA. L. REV. 1745, 1746–47, 1823–24 (2012) (examining noneconomic incentives); Roberta Rosenthal Kwall, "Author-Stories:" *Narrative's Implications for Moral Rights and Copyright's Joint Authorship Doctrine*, 75 S. CAL. L. REV. 1, 44–47 (discussing the noneconomic interests of the plaintiff in *Thomson v. Larson*, 147 F.3d 195 (2d Cir. 1998)); Jiarui Liu, *Copyright for Blockheads: An Empirical Study of Market Incentive and Intrinsic Motivation*, 38 COLUM. J.L. & ARTS 467, 472–73 (2015) (finding that, while musicians are motivated to create for primarily emotional or self-expressive purposes, they recognize the value of financial incentives in facilitating creation).

20. 17 U.S.C. § 302. Analysis of empirical data has also been used to investigate the assumptions underlying copyright term extensions. See generally, e.g., Christopher Buccafusco & Paul J. Heald, *Do Bad Things Happen When Works Enter the Public Domain?: Empirical Tests of Copyright Term Extension*, 28 BERKELEY TECH. L.J. 1 (2013) (using audiobook data to question prevailing rationales for copyright term extension); Kristelia García, James Hicks & Justin McCrary, *Copyright and Economic Viability: Evidence from the Music Industry*, 17 J. EMPIRICAL LEGAL STUD. 696 (2020).

The incentive theory of copyright law dates to its inception over 200 years ago, but the empirical evidence for it remains underwhelming.²¹ One barrier to gathering empirical evidence is that the relevant data are often proprietary;²² another barrier is the difficulty of quantifying the quality of creative output.²³ The most comprehensive study²⁴ to quantify how copyright protection impacts the quality of creative output was published only a few years ago, and it focused on the impact of sound recording copyright.²⁵ Copyright's incentive theory would predict that as copyright has increased the magnitude of the monetary rewards musicians stand to gain, musicians would have responded with improved song output. On the contrary, Professor Glynn Lunney's landmark 2018 study²⁶ of copyright law and the recording industry found that from 1962 to 2015, more money for creators did not lead to more or better music.²⁷ In fact, for the highest-earning recording artists, periods of high revenue in the recording industry correlated with fewer song releases.²⁸

Other studies have investigated the psychology of monetary incentives and creativity more generally.²⁹ The lesson taking shape hints that, at best, the relationship between copyright's monetary incentives and creativity is complicated and potentially limited to certain contexts and small effect sizes.³⁰ At worst, in domains beyond sound recordings, copyright's monetary incentives may be irrelevant or even harmful to creativity.³¹ But as Professor Christopher Jon Sprigman has put it:

For the empirical study of copyright incentives to provide a clear picture of how, and when, copyright motivates creativity, we need more—a lot more,

21. See Sprigman, *supra* note 9, at 455. The practice of testing the soundness of copyright law against empirical evidence dates back at least to Stephen Breyer, *The Uneasy Case for Copyright: A Study of Copyright in Books, Photocopies, and Computer Programs*, 84 HARV. L. REV. 281 (1970). Explicit empirical challenges to the validity of the incentive theory grew out of a body of social science literature, finding little to no benefit from financial incentives to creative tasks in experimental settings. See, e.g., *id.*

22. See Sprigman, *supra* note 9, at 472.

23. See Guy A. Rub, *Incentivizing Top-Musicians*, 6 TEX. A&M J. PROP. L. 37, 41 (2020); Sprigman, *supra* note 9, at 464; Joel Waldfogel, *Copyright Protection, Technological Change, and the Quality of New Products: Evidence from Recorded Music Since Napster*, 55 J.L. & ECON. 715, 717 (2012) (discussing various approaches to quantifying quality in recorded music).

24. See generally GLYNN LUNNEY, *COPYRIGHT'S EXCESS: MONEY AND MUSIC IN THE US RECORDING INDUSTRY* (2018).

25. Additionally, Professor Joel Waldfogel has found that decreased financial incentives—due to the rise of online music piracy—did not negatively impact the quality of recorded music. Waldfogel, *supra* note 23, at 737–38.

26. LUNNEY, *supra* note 24, at 4.

27. In some cases there was a negative correlation. *Id.* at 9.

28. *Id.*

29. See generally, e.g., Buccafusco et al., *supra* note 19; Rub, *supra* note 23; Sprigman, *supra* note 9. For foundational work outside the legal domain, see generally TERESA M. AMABILE, *CREATIVITY IN CONTEXT* (1996).

30. See Sprigman, *supra* note 9, at 465.

31. See generally, e.g., Eric E. Johnson, *Intellectual Property and the Incentive Fallacy*, 39 FLA. ST. U. L. REV. 623 (2012); see also Gregory N. Mandel, *To Promote the Creative Process: Intellectual Property Law and the Psychology of Creativity*, 86 NOTRE DAME L. REV. 1999, 2007–11 (2011).

and more varied—studies. . . . The question of what spurs creativity is of surpassing importance to human life. It's a scandal we know as little about it as we do."³²

One contribution of this Article is to broaden the conceptualization of monetary incentives. In the standard model of monetary incentives, the essential variable is the absolute amount the creator stands to receive. The more they receive, the more they will produce. This Article goes beyond the standard model by introducing the notion of relative rewards to the empirical copyright incentives literature. This variable is determined not by the absolute amount the creator receives, but by the amount they receive relative to their cocreators.

Social psychologists and economists have long recognized that relative income—pay *rank*—matters to people.³³ In fact, relative pay often matters more than absolute pay when it comes to job satisfaction or workers' intentions.³⁴ This Article explores what *kinds* of social comparisons we can infer creative collaborators are making when dividing income from their joint work. I focus on two kinds of social comparisons that creators can use to guide the division of rewards: (1) a *rank* approach that looks at who ranks higher in terms of the value of their contributions to the joint work and allocates more rewards to the greater contributor, leading to a ranking between collaborators in their compensation in the form of unequal relative rewards, and (2) an *equal outcomes* approach that balances rewards across all contributors and does not reflect unequal value contributions, leading to equal relative rewards. In what follows, I explain and contrast these two approaches in the context of how they arise in joint authorship jurisprudence. Then, in Study 1, I investigate the consequences, if any, of these two approaches to relative rewards for creative productivity.

The topic of relative rewards has not been addressed in empirical legal scholarship.³⁵ But courts have long intuitively grasped the potential motivational impact for creative collaborators of how royalties are allocated, and this is reflected in the common-law history of joint authorship.³⁶ Copyright law's

32. Sprigman, *supra* note 9, at 477.

33. See generally George A. Akerlof & Janet L. Yellen, *The Fair Wage-Effort Hypothesis and Unemployment*, 105 Q.J. ECON. 255 (1990); Heather J. Smith, Thomas F. Pettigrew, Gina M. Pippin & Silvana Bialosiewicz, *Relative Deprivation: A Theoretical and Meta-Analytic Review*, 16 PERSONALITY & SOC. PSYCH. REV. 203 (2012).

34. An experiment examining job satisfaction among employees at the University of California found that workers' satisfaction with their pay was influenced more by their pay rank relative to coworkers than to their actual level of pay. David Card, Alexandre Mas, Enrico Moretti & Emmanuel Saez, *Inequality at Work: The Effect of Peer Salaries on Job Satisfaction*, 102 AM. ECON. REV. 2981, 2981 (2012). Job satisfaction was lower for employees whose pay for their unit and occupation was below the median. *Id.* at 2982. Interestingly, employees paid above the median were no more satisfied with their job. *Id.* For workers comparing their pay against the social reference point of median pay, negative comparisons mattered but positive comparisons did not. *Id.* at 2983.

35. The concept has been discussed in other contexts. See, e.g., Yochai Benkler, *Coase's Penguin, or, Linux and The Nature of the Firm*, 112 YALE L.J. 369, 426–30 (2002) (positing that a dimension of “jealousy and altruism” factors into an individual’s reward for their labor).

36. See *infra* note 39.

default rules for the division of license proceeds directly specify joint authors' relative rewards.³⁷ Over the last thirty years, courts' intuitions about the relationship between relative rewards and incentives to create have driven a reshaping of the tests for joint authorship in certain circuits. Under the Copyright Act of 1976, the law of joint authorship establishes that for coauthorship to arise between creative collaborators, they must have had the *intent to merge* their contributions into a unitary whole.³⁸ Importantly, contributions do not need to be equal;³⁹ explicitly weighing the parties' relative contributions to determine coauthorship is precluded by longstanding precedent. This is an equal outcomes approach to relative rewards.

Beginning in the 1990s, through a linked series of joint authorship cases in the Second, Seventh, and Ninth Circuits, a shift was afoot.⁴⁰ The circuits each expressed concern that majority contributors would be demotivated from collaborating if they were required to share the benefits of authorship equally with collaborators who contributed considerably less.⁴¹ These courts sought to protect majority contributors' incentives to collaborate. They did so by installing

37. See *infra* note 39.

38. 17 U.S.C. §§ 101, 201(a).

39. "It is not essential that the execution of the work should be equally divided; as long as the general design and structure was agreed upon, the parties may divide their parts and work separately." *Maurel v. Smith*, 271 F. 211, 215 (2d Cir. 1921). This doctrine, established in the then-prevailing circuit for joint authorship determinations, was not questioned by subsequent courts prior to the introduction of the Copyright Act. On the very rare occasion that a party without a contract did seek to vary joint authorship rewards on the basis of relative contributions, the court refused to consider the innovation. *E.g.*, *Sweet Music, Inc. v. Melrose Music Corp.*, 189 F. Supp. 655, 659 (S.D. Cal. 1960). The common-law rationale for this doctrine was given by Judge Hand in *Maurel v. Smith*, 220 F. 195, 199–200 (S.D.N.Y. 1915): that it is impossible to distinguish which single contribution, if any, is responsible for the work's commercial appeal to a consumer, and therefore, in the absence of a contract term, contributors must "share alike." In patent law, unlike in copyright law, the statute directly addresses the issue of disparities in contribution, requiring that coinventors not make the "same type or amount of contribution." 35 U.S.C. § 116(a)(2). As a putative coinventor is required to contribute to only a single claim in the patent, valid contributions may be considerably unequal. See *id.* § 116(a)(3); *Ethicon, Inc. v. U.S. Surgical Corp.*, 135 F.3d 1456 (Fed. Cir. 1998) (granting coinventorship to a contributor to two of fifty-five patent claims).

40. See generally *Thomson v. Larson*, 147 F.3d 195 (2d Cir. 1998) (a joint authorship case involving two Broadway playwrights); *Erickson v. Trinity Theatre, Inc.*, 13 F.3d 1061 (7th Cir. 1994) (a joint authorship case involving a series of plays); *Childress v. Taylor*, 945 F.2d 500 (2d Cir. 1991) (a joint authorship case involving a comedian). What is most significant about these cases as a group, discussed *supra*, is that—in addition to each arising from the theater industry—they required courts to consider how parties should be treated when each has made some kind of contemporaneous creative contribution to a work, those contributions differ significantly in quantity (and perhaps quality), and no contract exists to define each creator's rights. Prior to this, the Second Circuit had been confronted with results at the district court level that suggested that a literal reading of the statute was unsatisfactory for resolving increasingly complex fact patterns. See generally *Weissmann v. Freeman*, 868 F.2d 1313 (2d Cir. 1989); *Fisher v. Klein*, No. 86 CIV. 9522, 1990 WL 10072477 (S.D.N.Y. June 26, 1990) (introducing the "dominant author" concept).

41. *Thomson*, 147 F.3d at 200 ("The[re] [is a] potential danger of allowing anyone who makes even a minimal contribution to . . . a work to be deemed a statutory co-author" (citing *Childress*, 945 F.2d at 507–08)); *Erickson*, 13 F.3d at 1070 ("Rarely will minor contributors have the presumption to claim authorship status."); *Childress*, 945 F.2d at 508 ("Focusing on whether the putative joint authors regard themselves as joint authors is especially important in circumstances, such as the instant case, where one person . . . is indisputably the dominant author of the work and the only issue is whether that person is the sole author or she and another . . . are joint authors.").

a conventional wisdom at the heart of joint authorship: those who do more should receive more.⁴² This is a ranking approach to relative rewards. The courts' central concern was that a failure to honor this vision of fairness would demotivate main contributors' efforts in joint work or cause them to forgo the benefits of collaboration entirely.⁴³

These courts sought to protect the interests of majority contributors while constrained by the equal-split precedent that made doing so difficult.⁴⁴ Against this background, these courts' strategy was to effectively bar lesser contributors from attaining authorship status, thereby channeling all benefits of authorship to the majority contributor. To do so, they used their flexibility in interpreting the law to reinvent the statutory intent to merge requirement.⁴⁵ This reinvention in its first iteration took the form of a rule that the parties must have intended not simply to merge their contributions, but to be coauthors.⁴⁶ This formed the basis for the later requirement that the lesser contributor must have exercised creative control over the work.⁴⁷ In terms of relative rewards, this shift in certain circuits

42. This is stated directly in *Respect Inc. v. Committee on Status of Women*, 815 F. Supp. 1112, 1119 (N.D. Ill. 1993). It is treated as axiomatic in landmark cases. See, e.g., *Childress*, 945 F.2d at 509 (“[E]qual sharing of rights should be reserved for relationships in which all participants fully intend to be joint authors.”).

43. This is typically framed in relation to the mandate of the Copyright Clause: if lesser contributors are allowed joint authorship (and thus an equal share in the work), then majority contributors will be disinclined to collaborate, and this will negatively impact the quality of works created. See *Aalmuhammed v. Lee*, 202 F.3d 1227, 1235 (9th Cir. 2000); *Erickson*, 13 F.3d at 1069.

44. *Contra* GOLDSTEIN, *supra* note 10, § 4.2.1.1 (“[T]here is no reason to believe that editors and editees, or others comparably situated, require ward of the court status any more than other classes of copyright owners.”).

45. See generally *Thomson*, 147 F.3d 195; *Erickson*, 13 F.3d 1061; *Childress*, 945 F.2d 500.

46. The concept was first introduced in *Childress*, 945 F.2d at 508:

Though joint authorship does not require an understanding by the co-authors of the legal consequences of their relationship, obviously some distinguishing characteristic of the relationship must be understood in order for it to be the subject of their intent. In many instances, a useful test will be whether, in the absence of contractual agreements concerning listed authorship, each participant intended that all would be identified as co-authors.

Childress v. Taylor offered “billing” and “credit” as potential indicators of whether an intent to be coauthors was present. *Id.* *Thomson v. Larson* built on this inquiry with “factual indicia of ownership and authorship,” namely “decisionmaking authority,” “billing,” “written agreements with third parties,” and other evidence. 147 F.3d at 202–05. While decisionmaking authority was listed as a single factor in *Thomson*, the other factors were inarguably dependent upon it: without decisionmaking authority, a putative coauthor could not determine how to bill contributors, execute agreements with third parties, and so on. However, the presence or absence of decisionmaking authority says nothing about the putative coauthor’s creative contribution to the work (or lack thereof). This would present a problem when control over the work became the hallmark of authorship.

47. Control over the work was conceptualized as the touchstone of authorship. The Seventh and Ninth Circuits arrived at substantially similar tests via two different paths. Control was added as necessary evidence of the parties’ “intent to be co-authors” in the Seventh Circuit. *Erickson*, 13 F.3d at 1068. Control was framed as a new test of joint authorship by the Ninth Circuit, derived mainly from the definition of authorship in *Burrow-Giles Lithographic Co. v. Sarony*, 111 U.S. 53 (1884)—not a joint authorship case—which in turn derived it from the English case *Nottage v. Jackson*, 11 Q.B.D. 627 (1883). See *Aalmuhammed*, 202 F.3d at 1233. For a discussion of *Burrow-Giles* and judicial approaches to the “authorship” requirement, see Robert Kirk Walker & Ben Depoorter, *Unavoidable Aesthetic Judgments in Copyright Law: A Community of Practice Standard*, 109 Nw. U. L. REV. 343, 358–62 (2015). The “decisionmaking authority” requirement in *Thomson*, 147 F.3d at

amounts to a rank approach that, while simple, creates a stark ranking between collaborators: majority contributors receive the benefits of authorship, and minority contributors do not.

The equal outcomes and rank approaches are two irreconcilable ways that royalties can be divided between unequal collaborators. As a matter of creative incentives, which approach is preferable?⁴⁸ Or does the choice⁴⁹ between these compensation structures have no effect on creative productivity? After all, prior empirical work shows that increasing creators' absolute level of compensation in important contexts, like sound recordings, does not improve creative output.⁵⁰ Study 1 investigates these questions empirically in the context of songwriting. It compares the quantity and quality of creative output—songs—with which royalty-splitting approach—equal outcomes or rank—is practiced by Gold Record-earning music groups whose members contribute unevenly to their songwriting.

This empirical approach sheds light on creative incentives in action in two ways. First, music groups splitting equally may differ in their creative output from music groups following the rank approach to royalties. Regardless of which of the two split approaches is comparatively better, a difference between them would suggest that even if raising creators' absolute monetary rewards does not improve their creative output (as Lunney shows), relative differences in cocreators' compensation do matter. This would provide support for the

202–03, similarly grounds authorship status in a contributor's perceived right to control how the work is structured and disseminated.

48. An additional way of dividing royalties among unequal collaborators, categorizable as a refinement of the rank approach, is to quantify contributions in relative proportions and distribute royalties accordingly. *See, e.g.,* Brief of Amici Curiae Professors Shyamkrishna Balganesh, Justin Hughes, Peter Menell & David Nimmer in Support of Neither Party at 28–29, *Garcia v. Google, Inc.*, 786 F.3d 733 (9th Cir. 2015) (No. 12-57302); 1 MELVILLE B. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT § 6.08 (Matthew Bender & Co., Inc. rev. ed. 2022), LexisNexis; Justin Hughes, *Actors as Authors in American Copyright Law*, 51 CONN. L. REV. 1, 65–69 (2019); Kwall, *supra* note 19, at 58; Timothy J. McFarlin, *Shouting the People: Authorship and Audience in Copyright*, 93 TUL. L. REV. 445, 504–06 (2019); Benjamin E. Jaffe, Note, *Rebutting the Equality Principle: Adapting the Co-Tenancy Law Model To Enhance the Remedies Available to Joint Copyright Owners*, 32 CARDOZO L. REV. 1549, 1550–51 (2011). An issue with this approach is that, while royalties may be divided proportionally, the other rights that accrue to a joint author cannot. *See* Mary LaFrance, *Authorship, Dominance, and the Captive Collaborator: Preserving the Rights of Joint Authors*, 50 EMORY L.J. 193, 257 (2001). Other scholars propose distinct classes of works that would allow for proportional outcomes. *See, e.g.,* Rochelle Cooper Dreyfuss, *Commodifying Collaborative Research*, in *THE COMMODIFICATION OF INFORMATION* 397, 412 (Niva Elkin-Koren & Neil Weinstock Netanel eds., 2002); Abraham Bell & Gideon Parchomovsky, *Copyright Trust*, 100 CORNELL L. REV. 1015, 1016–22 (2015); Russ VerSteeg, *Intent, Originality, Creativity and Joint Authorship*, 68 BROOK. L. REV. 123, 179 (2002). However, at least in the context of joint songwriting, proportional rewards were disfavored by creators compared to the equal outcomes and rank splitting approaches. *See* Polcz, *supra* note 3 (manuscript at 2–3).

49. It should be noted that, if a rule is a default, psychological factors can discourage decisionmakers from opting out, even when failing to do so is suboptimal. *See generally* Omri Ben-Shahar & John A.E. Pottow, *On the Stickiness of Default Rules*, 33 FLA. ST. U. L. REV. 651 (2006). However, equal outcomes were not given default status in the experiments, and the ASCAP/BMI song registration process has no default division: song registrations that fail to state the royalty percentages of registrants are invalid. *See ASCAP Payment System*, ASCAP, <https://www.ascap.com/help/royalties-and-payment/payment/registering> (last visited Feb. 23, 2023).

50. *See, e.g., sources cited supra* note 23.

incentive theory of copyright but with a new twist. Second, with respect to songwriting, differences in creative output would suggest either partial support for the rank approach, or that the equal outcomes approach is comparatively preferable. Regardless of the direction of the difference, this would further our understanding of where copyright's incentives work and fail to work.

What results might we expect? On one hand, evidence from other domains suggests that the courts' concerns about the equal outcomes approach were not unfounded. An abundance of data can be interpreted as supporting the rank approach to relative rewards. Numerous studies support the intuition that compensating high performers like lower performers is not only perceived as unfair,⁵¹ but also causes high performers to scale back their efforts, which could negatively impact creative works.⁵² The notion that those who have more to offer should receive more in return reflects the values of the marketplace. There are important debates over normatively acceptable ratios of contributions to rewards, or over what should count as relevant contributions.⁵³ Typically, however, no one advocates disregarding relative contributions and issuing the same amount of compensation to all.⁵⁴ To be sure, there are contexts in which people agree that each person should be given the same amount of whatever is of interest. In laboratory experiments and some real-world scenarios, economists have found that people tend to distribute surpluses equally due to the desire to be fair,⁵⁵ or at least the desire to be perceived as fair.⁵⁶ The crucial difference,

51. Conversely, empirical studies have provided compelling evidence that satisfying creators' perception of fairness can spur both the quality and quantity of creative production. See Stephanie Plamondon Bair, *Rational Faith: The Utility of Fairness in Copyright*, 97 B.U. L. REV. 1487, 1502–06 (2017).

52. Professor Jason D. Shaw notes: “[T]heories purportedly supporting the benefits of pay compression do not, in a general sense, advocate equal pay for unequal work . . . even Pfeffer’s (1998) simplified practitioner-oriented treatment, which advocates pay compression as a best practice, also extols individual pay-for-performance as something organizations should universally adopt.” Jason D. Shaw, *Pay Dispersion*, 1 ANN. REV. ORG’L PSYCH. & ORG’L BEHAV. 521, 534 (2014) (citing JEFFREY PFEFFER, *COMPETITIVE ADVANTAGE THROUGH PEOPLE: UNLEASHING THE POWER OF THE WORK FORCE* (1998)).

53. Compensation based on seniority is a separate consideration, although some would argue that “time” is the relevant contribution in such cases. See Charles G. McClintock, Roderick M. Kramer & Linda J. Keil, *Equity and Social Exchange in Human Relationships*, 17 ADVANCES EXPERIM’L SOC. PSYCH. 183, 195 (1984).

54. It is not clear what inputs are, but they are somehow quantitative and contextually determined. Often, there is an assumption that focal inputs should be those antecedents with a more direct link to outcomes. See Robert Folger, *Rethinking Equity Theory: A Referent Cognitions Model*, in JUSTICE IN SOCIAL RELATIONS 145, 145 (Hans Werner Bierhoff, Ronald L. Cohen & Jerald Greenberg eds., 1986).

55. See, e.g., Ernst Fehr & Klaus M. Schmidt, *A Theory of Fairness, Competition, and Cooperation*, 114 Q.J. ECON. 817, 825–35 (1999).

56. See, e.g., James Andreoni & B. Douglas Bernheim, *Social Image and the 50-50 Norm: A Theoretical and Experimental Analysis of Audience Effects*, 77 ECONOMETRICA 1607, 1608 (2009). Theoretical economics literature suggests that when team members have heterogeneous abilities and vary in their contributions to team outcomes, egalitarian sharing rules cannot be optimal. Matthias Kräkel & Gunter Steiner, *Equal Sharing in Partnerships?*, 73 ECON. LETTERS 105, 105–06 (2001); Sebastian J. Goerg, Sebastian Kube & Ro’i Zultan, *Treating Equals Unequally: Incentives in Teams, Workers’ Motivation, and Production Technology*, 28 J. LAB. ECON. 747, 747–48 (2010). Using a social-preferences lens, some authors have argued that egalitarian sharing rules can in fact maximize incentive and effort, provided that team members are inequity averse and consequently suffer disutility when their payoffs differ from one another. See Björn Bartling & Ferdinand A. von Siemens, *Equal Sharing Rules in Partnerships*, 166 J. INST’L & THEORET’L ECON. 299, 299 (2010); Fehr &

however, is that, in those situations, what is being divided is not the product of the parties' joint labor.⁵⁷

On the other hand, there are reasons to question these courts' views that this rank approach to joint authorship better promotes creative production than the alternative of granting lesser contributors equal coauthorship status.⁵⁸ The results of my recent empirical article *Co-Creating Equality*⁵⁹ suggest that the rank approach is not the preferred split approach among songwriters.⁶⁰ In *Co-Creating Equality*, royalty splits were inferred for over 1.2 million songs, or approximately one-third of all cowritten songs amassing performance royalties in the United States. A substantial majority were split equally between the credited writers.⁶¹ At least in songwriting, most joint authors reject the values of the marketplace, instead allocating a pro rata royalty share to lesser contributors.⁶² Nevertheless, despite being preferred, equal splitting could turn out to be an inefficient norm that negatively impacts the quantity or quality of joint works, particularly given the received wisdom that equal outcomes for unequal work is demotivating.⁶³ In that case, the equal outcomes approach could be regarded as a failed penalty-default rule.⁶⁴

Schmidt, *supra* note 55, at 817. However, until any predictive factors are identified specifying *who* is inequity averse, or *when* workers are inequity averse, their central claim is essentially an empty tautology.

57. In business, the general partnership organizational form, which grants equal ownership rights to all partners by default, is often used only because it is required of certain regulated entities. When the general partnership ceased to be required of law firms, nearly all abandoned the form; most became limited liability corporations and abandoned the lockstep system. See Scott Baker & Kimberly D. Krawiec, *The Economics of Limited Liability: An Empirical Study of New York Law Firms*, 2005 U. ILL. L. REV. 107, 110 (2005).

58. Scholars have criticized the rank approach as excluding and demotivating those collaborators who have made comparatively smaller contributions but whose contributions are nonetheless original, expressive, and would otherwise be deemed authorial. See, e.g., Shyamkrishna Balganesh, *Unplanned Coauthorship*, 100 VA. L. REV. 1683, 1738 (2014); Bell & Parchomovsky, *supra* note 48, at 1020–21; F. Jay Dougherty, *Not a Spike Lee Joint? Issues in the Authorship of Motion Pictures Under U.S. Copyright Law*, 49 UCLA L. REV. 225, 240–49 (2001); LaFrance, *supra* note 48, at 246–55; Gregory N. Mandel, *Left-Brain Versus Right-Brain: Competing Conceptions of Creativity in Intellectual Property Law*, 44 U.C. DAVIS L. REV. 283, 349–50 (2010); Anthony J. Casey & Andres Sawicki, *Copyright in Teams*, 80 U. CHI. L. REV. 1683, 1718–21 (2013). Scholars have further criticized the rank approach as potentially including producers as coauthors, even though they are not, and typically do not intend to be, authors. See, e.g., GOLDSTEIN, *supra* note 10, § 4.2.1.2. Almost all scholars agree that the rank approach has been overapplied. See sources cited *supra*. It has not been reserved for cases where great contribution disparities are present.

59. Polcz, *supra* note 3 (manuscript at 47).

60. Songwriting is a domain with a high volume of creation, one that is not typically covered by work-made-for-hire rules and is often undertaken by legally unsophisticated parties who may leave gaps in their contracts with co-songwriters, if they contract at all. See Peter Lee, *Reconceptualizing the Role of Intellectual Property Rights in Shaping Industry Structure*, 72 VAND. L. REV. 1197, 1280 (2019); Gregory N. Mandel, *The Public Perception of Intellectual Property*, 66 FLA. L. REV. 261, 275–76 (2014).

61. Polcz, *supra* note 3 (manuscript at 44).

62. *Id.*

63. For guidelines concerning how the efficiency of norms might be tested, see Eric A. Posner, *Law, Economics, and Inefficient Norms*, 144 U. PA. L. REV. 1697, 1726–27 (1996).

64. Majority preference is not always the best basis for the content of a default rule. In contract law, it is sometimes more efficient for a rule to mimic what most parties would not prefer—a penalty default. See generally Ian Ayres & Robert Gertner, *Filling Gaps in Incomplete Contracts: An Economic Theory of Default Rules*, 99 YALE L.J. 87 (1989). Penalty defaults are appropriate when an exploitable information asymmetry

The results presented in the next Part suggest that songwriters' rejection of the values of the marketplace may be to consumers' benefit. The equal-split approach is linked with higher-quality songs by Gold Record music groups. The dataset and analyses leading to this finding are described in Study 1. The rest of Part II integrates theory and additional empirical results to explain this surprising finding. The marketplace is not the moral landscape in which most songwriters perceive themselves to be cocreating; Studies 2 and 3a reveal the social embeddedness of many royalty splits and how this drives songwriters to give precedence to the principle of equal outcomes instead.

II. THE STUDIES

A. STUDY 1: ON THE CHARTS – ROYALTY SPLITS AND CREATIVE PRODUCTION

This study looks at uneven-contribution music groups⁶⁵ that have earned certified Gold Records since 1959, and asks two questions about the consequences for creative production of the groups' approaches to royalty sharing. First, do music groups that exclude lesser contributors from royalty sharing, with the group's decision leading to the same outcome as the rank approach (*Rank groups*), create more music than music groups whose approach to royalty sharing aligns with the equal outcomes approach (*Equal Outcomes groups*)? Second, do music groups that follow the rank approach produce better-quality music than Equal Outcomes groups, as demonstrated by higher sales⁶⁶ and more Grammy Awards? My analysis shows that they do not, and that this finding holds across genre, region of origin, decade, and group size.

The "band," or music group, is the paradigmatic collaborative unit in the music industry, and the members of music groups that have earned Gold Records unquestionably have a financial stake in coauthorship credit decisions. Groups with Gold Records are like songwriting collaborations in general, making them an ideal study sample. Like co-songwriters more broadly, music groups are not one-time collaborations,⁶⁷ and they tend to decide early on how they will split

exists between contracting parties as to their "type," or when it is more efficient for parties to reveal private information in a contract rather than leaving it for third parties (such as courts) to discover after the fact. *Id.* at 92–95. The latter is plausibly applicable to joint songwriting: it can be difficult for courts to determine the extent of any one collaborator's contribution, although it is arguably just as difficult for creative collaborators in many contexts to identify the extent of these contributions before they are made. Regardless, my research supports the idea that the equal outcomes default is, at least in songwriting, a literal "majoritarian" default.

65. As this study is about joint authorship, only music groups that primarily write their own songs are included.

66. See Ralph S. Brown, *Eligibility for Copyright Protection: A Search for Principled Standards*, 70 MINN. L. REV. 579, 592 (1985); Waldfogel, *supra* note 23, at 723–26 (using certification-based sales data as a measure of the quality of recorded music).

67. This contrasts with collaborations that produce potential joint works in other industries, such as film, where creative teams are assembled on an ad hoc basis.

royalties.⁶⁸ Unlike co-songwriting more broadly, there is a copious amount of publicly available information on bands' innerworkings, including their songwriting processes. Compared to music groups in general, Gold Record music groups have the advantage that the sales success of their releases can be estimated across a sixty-year period via the RIAA's Gold Record certifications. Gold Records are certified by the RIAA based on sales of albums⁶⁹ and singles.⁷⁰ The first Gold Record was awarded to Perry Como's "Catch A Falling Star" in the late 1950s, based on sales of one million copies.⁷¹ In the decades since, the way music is distributed and sold has changed dramatically. The RIAA has devised a means of determining sales equivalents (i.e., Gold Records) for music groups that reaches across these differences.⁷²

1. Methods

Between 1959 and 2021, the RIAA awarded Gold Records to over 1,000 music groups that wrote most of their own songs. Every qualifying music group for which information could be obtained on the factors of interest was included

68. For cowritten songs more generally, the median number of collaborations between the same people (any number of collaborators) is five. Polcz, *supra* note 3 (manuscript at 43). Seventy-five percent of music groups did not alter their initial split practices. *Id.* Equal-split decisions were also consistent regardless of collaborative output: coauthors who collaborated once were just as likely to split equally as those who collaborated on a hundred songs. *Id.* at 45.

69. See *RIAA and GR&F Certification Audit Requirements RIAA Album Award*, RECORDING INDUS. ASS'N OF AM., <https://www.riaa.com/wp-content/uploads/2021/03/ALBUM-AWARD-RIAA-AND-GRF-CERTIFICATION-AUDIT-REQUIREMENTS.pdf> (last visited Feb. 23, 2023). Gold certification indicates sales of five hundred thousand and Platinum of one million units. *Id.* A unit is defined as a physical or digital album sale, ten permanent track downloads, 1,500 on-demand streams, or some combination of the above. *Id.* Prior to 1975, Gold certification required \$1 million in wholesale sales, with no unit sales requirement. See ADAM WHITE, *THE BILLBOARD BOOK OF GOLD & PLATINUM RECORDS* viii (1990).

70. See *RIAA and GR&F Certification Audit Requirements RIAA Digital Single Award*, RECORDING INDUS. ASS'N OF AM., <https://www.riaa.com/wp-content/uploads/2016/02/DIGITAL-SINGLE-AWARD-RIAA-AND-GRF-CERTIFICATION-AUDIT-REQUIREMENTS.pdf> (last visited Feb. 23, 2023). Gold certification indicates sales of five hundred thousand and Platinum of one million units. *Id.* A unit is defined as a permanent digital download, 150 on-demand streams, or some combination of the two (physical singles sales are now largely nonexistent). *Id.* Between 1976 and 1989, Platinum certification indicated sales of two million units. See WHITE, *supra* note 69, at viii.

71. *Catch a Falling Star by Perry Como*, SONGFACTS, <https://www.songfacts.com/facts/perry-como/catch-a-falling-star> (last visited Feb. 23, 2023). The first Gold Record for an album would be awarded four months later, for \$1 million in wholesale sales, to the cast recording of *Oklahoma!*. Neal Umphred, "Baby, It's Gold Outside": About Those RIAA Gold and Platinum Record Awards, MEDIUM (Jan. 6, 2019), <https://medium.com/tell-it-like-it-was/baby-its-gold-outside-df1083855433>.

72. For instance, the introduction of digital sales metrics in 2016 found one album sale to be the equivalent of ten digital album track sales or 1,500 digital album track video or audio streams. *RIAA Debuts Album Award with Streams*, RECORDING INDUS. ASS'N OF AM. (Feb. 1, 2016), <https://www.riaa.com/riaa-debuts-album-award-streams/>. Nielsen SoundScan, the basis for the modern Billboard charts, began tracking music sales only in 1991. Rob Harvilla, *How SoundScan Changed Everything We Knew About Popular Music*, THE RINGER (May 25, 2021, 6:30 AM), <https://www.theringer.com/music/2021/5/25/22452539/soundscan-billboard-charts-streaming-numbers>. Prior to that, Billboard polled radio stations and stores for sales data, creating an inconsistent standard. *Id.*

($n = 971$).⁷³ The research and coding processes were highly labor intensive, taking several hundred hours over which thousands of sources were screened and compiled.⁷⁴ The metrics for investigating the relationship between music groups' royalty-splitting practices and their creative productivity were number of studio albums,⁷⁵ for the quantity of output, and for the quality of creative output, sales data (including streams)⁷⁶ and number of Grammy Awards.⁷⁷ The collaborations of interest are those about which the rank approach and the equal outcomes model disagree: where all collaborators make copyrightable contributions, but some contribute more than others. Music groups fitting that description were coded as *uneven contributions* groups using publicly available

73. The sample excludes music groups for which prior relationship status was not available. The search of the RIAA Gold and Platinum database for Group and Duo artists resulted in an initial list of 1,669 group and duo performances, many of which were not by bands. Six hundred sixty-six results were excluded for non-music group/band joint performances, music groups mostly performing songs not written by music group members, backing bands, and music groups for which insufficient information was available concerning songwriting processes or credits. Of the remaining 1,003 music groups, thirty-two were excluded due to insufficient information about group member relationships.

74. First, the coders collected and coded data on a subset of the Gold Record music groups. I finetuned the coding protocol and recoded all music groups. The design of the coding process incorporated guidelines that were derived from Krippendorff and Neuendorf, and was presented in Mark A. Hall & Ronald F. Wright, *Systematic Content Analysis of Judicial Opinions*, 96 CALIF. L. REV. 63, 107–17 (2008). Interrater reliability was measured as 84.5% using Krippendorff's alpha; percent agreement was 91%. Krippendorff's alpha is a standard measure of agreement between multiple coders. See KLAUS KRIPPENDORFF, *CONTENT ANALYSIS: AN INTRODUCTION TO ITS METHODOLOGY* 221–30 (2d ed. 2004).

75. Only albums with new material were counted; compilations and live albums featuring previously released songs were not included. In order to explore potential correlations between bands' relationship types, writing-credit split choices, and creative output, data was collected on each group's total number of albums. This information was obtained by web scraping AllMusic and by using each group's AllMusic profile URL. The average number of albums was 3.4.

76. See *supra* note 70. Sales were measured as RIAA Award Points. An RIAA Award Point represents one Platinum album or single. A Gold album or single is 0.5 Award Points. An additional Award Point is granted for each Multi-Platinum certification or equivalent. A Gold album represents five hundred thousand units sold (\$1 million dollars in wholesale sales prior to 1975). *Id.* A Gold single represents five hundred thousand units sold (one million prior to 1989). A Platinum album or single represents one million units sold (two million for singles prior to 1989). *Id.* Starting in 1984, discs in multi-disc sets were counted as separate units, and Multi-Platinum certification was instituted for each additional Platinum threshold reached. *Id.* In 2016, digital sales were added, allowing a "unit" to represent, in addition to a physical album sale, a digital album sale, ten track downloads, or 1,500 track streams from the album. *Id.*

77. In addition to sales, critical evaluation of music has been a common means of determining musical quality. See, e.g., LUNNEY, *supra* note 24, at 88–89; Waldfogel, *supra* note 23, at 716–17. The Grammy Awards, voted on by musical professionals and vetted by committees of experts, are another recognized metric of industry success. See *The Recording Academy Grammy Awards Voting Process*, GRAMMY AWARDS, <https://www.grammy.com/grammys/awards/voting-process> (last visited Feb. 23, 2023). For album awards, voters are "expected to consider the quality and artistry of the collection of tracks as a whole." Nate Hertweck, *What's the Difference? GRAMMY for Album vs. Record of the Year Explained*, GRAMMY AWARDS (Dec. 9, 2018, 2:01 PM), <https://www.grammy.com/grammys/news/whats-difference-grammy-album-vs-record-year-explained>. While the use of a Grammy Award as a substitute for musical quality is not without its critics, awards are nevertheless recognized as "vital" in forming the canon of American popular music. See Mary R. Watson & N. Anand, *Award Ceremony as an Arbiter of Commerce and Canon in the Popular Music Industry*, 25 POPULAR MUSIC 41, 41 (2006).

sources.⁷⁸ Alternatively, group members either contribute evenly (*even contributions* groups) or have some members who do not make copyrightable contributions to songwriting (*some do not contribute* groups).

The copyrightability of songwriting contributions was assumed when quotes labeled group members as songwriters or confirmed members' involvement in songwriting in general terms.⁷⁹ When members' particular

78. To classify music groups, I hired outside coders to compile and review publicly available sources of information on the songwriting processes of the Gold Record music groups and to code them according to the songwriting contributions protocol. The sources consulted were primarily interviews, biographies, and feature articles covering a music group's songwriting process and the degree of group members' involvement. The reliability of source material for each music group was classified by a coder as *Very Strong*, *Strong*, *Satisfactory*, or *Insufficient Information* (these music groups were excluded). Source reliability was *Very Strong* when the code was based primarily on unambiguous direct interview quotes from the group members. Source reliability was *Strong* when third-party quotes were drawn from mainstream or music-focused publications and clearly delineated the songwriting process. *Satisfactory* reliability was given to codes based primarily on tertiary or amateur sources. Overall, source reliability was *Very Strong* or *Strong* for 78% of the groups, and *Satisfactory* for the remaining 22%. Multiple sources support the coding of 87% of groups, and source reliability was *Very Strong* or *Strong* a majority of the time (79%) when coding was based on a single source. An independent coder coded an overlap of 10% of the music groups (100). Given that the coding was based on first- or third-party verbal characterizations of contributions, there may be potential concerns that bias may affect the validity of the coding, notably favoritism bias (e.g., band member self-aggrandizement or journalist preference), or cultural bias (e.g., regarding rhythmic contributors as intrinsically uncopyrightable). For favoritism bias to impact the coding, it would need to shift a code across the three categories (e.g., *Some members do not contribute* to *Uneven contributions*, or *Even contributions* to *Uneven contributions*). To refer to a famous example, the varying accounts of whether Paul McCartney or John Lennon contributed more to a given Beatles song do not impact the group's coding as *Some members do not contribute*, because it does not alter the fact that Ringo Starr only rarely contributed to songwriting. Even then, since the majority of groups are coded based on multiple sources, the account would have to be uncontradicted for favoritism bias to impact the coding. I think it is reasonable to assume that the impact of favoritism bias on the coding is minimal. Second, I found no reason to suspect that possible differences between the cultural and legal construction of a copyrightable contribution or any cultural bias in descriptions of contributions would rise to a level that would impact the coding. To the contrary, where interviews addressed songwriting contributions with any degree of specificity, songwriters' own understanding of the parameters of authorship was typically more expansive than the prevailing legal standard. This was one impetus behind adopting a broad standard for copyrightability, discussed *supra* Part I. Adopting a narrower standard—for instance, discounting contributions other than to the lyrics or melody—would have shifted more music groups into the *Some members do not contribute* category, making any preference for granting authorship for unequal contributions even more striking.

79. Uncontradicted assumptions were informed by genre norms. For example, rappers were taken to be delivering their own verses, and members of electronic dance music (EDM), rap, and hip-hop groups described as “producers,” “programmers,” or “beat makers” were assumed to be making copyrightable musical contributions. See Tonya M. Evans, *Sampling, Looping, and Mashing . . . Oh My!: How Hip Hop Music Is Scratching More Than the Surface of Copyright Law*, 21 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 843, 852–53 (2011); Chris Robley, *Should My Producer Get Publishing and Songwriting Credit?*, CD BABY: DIY MUSICIAN (July 11, 2018), <https://diymusician.cdbaby.com/music-rights/does-my-producer-deserve-publishing-and-songwriting-credit/>. If any group member was described as only making contributions to songs that are not legally considered songwriting—such as arrangement, suggestions, or feedback—then their music groups were coded as *Some do not contribute*. To distinguish between *Uneven* and *Even* contributions by group members, industry norms, where existing, supplied assumptions; for example, lyrics were weighted as comprising half of the song. See Daniel Abowd, Note, *FRE-Bird: An Evidentiary Tale of Two Colliding Copyrights*, 30 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 1311, 1329 (2020). Since compositions may be the product of jam sessions or studio experimentation, a sound recording may represent the fixed form of the composition. See *Bridgeport Music, Inc. v. UMG Recordings, Inc.*, 585 F.3d 267, 276 (6th Cir. 2009); Robert Brauneis, *Musical Work Copyright for the Era of Digital Sound Technology: Looking Beyond Composition and Performance*, 17 TUL. J. TECH. & INTELL. PROP. 1, 28 (2014) (“By 2012, 77% of musical work registrations were accompanied by

contributions were described,⁸⁰ case law (interpreting the Copyright Act) was the primary basis for assessing their copyrightability.⁸¹ Group member contributions, which included the elements of a musical work—lyrics,⁸²

phonorecord deposits and only 17% by deposits of musical notation . . .”). With this in mind, coders were instructed to regard contributions as “arrangements”—contributions to the sound recording rather than the music composition—only when group members clearly described them as such, with the understanding that the interviewee was aware of the distinction. These represent the categories of contribution ruled not to be protectible under the *Childress* standard. *See* *Erickson v. Trinity Theatre, Inc.*, 13 F.3d 1061, 1068 (7th Cir. 1994); *Childress v. Taylor*, 945 F.2d 500, 509 (2d Cir. 1991); *BTE v. Bonnecaze*, 43 F. Supp. 2d 619, 628 (E.D. La. 1999) (finding no joint authorship when a musician contributes unfixed “ideas and helpful insights”). Interviewees discussed a variety of contributions, some copyrightable (whether to the composition or to the sound recording) and others likely not.

80. *See, e.g.*, Tim Louie, *An Interview with Sixx:A.M.: Returning with Their Own Prayers for the Damned*, THE AQUARIAN (May 18, 2016), <https://www.theaquarian.com/2016/05/18/an-interview-with-sixxa-m-returning-with-their-own-prayers-for-the-damned/> (“It’s the three of us getting together in a room picking up instruments and talking. We talk a lot before we even start writing, discussing subject matters, and working through melody ideas, working through riff ideas and we all bring in ideas.”).

81. Additionally, the United States Copyright Office (USCO) was a source for the concept that a musical work consists of four copyrightable elements: melody, rhythm, harmony, and lyrics. *See* U.S. COPYRIGHT OFF., COMPENDIUM OF U.S. COPYRIGHT OFFICE PRACTICES § 802.3 (3d ed. 2021).

82. Individual words and short phrases are typically denied copyright protection. *See* NIMMER & NIMMER, *supra* note 48, § 2.01[B][3]. However, this general rule may not be applicable in a songwriting context. *See* GOLDSTEIN, *supra* note 10, § 2.8 (“[T]he Act’s inclusion of ‘accompanying words’ in its reference to musical works means that musical and lyrical elements that by themselves would not be sufficiently original and expressive to qualify for copyright may combine with each other to produce a copyrightable work.”). Courts have been willing to consider the copyrightability of lyrics that would not reach the originality threshold if published as a literary work. *See, e.g.*, *May v. Sony Music Ent.*, 399 F. Supp. 3d 169, 171 (S.D.N.Y. 2019) (refusing to dismiss an infringement claim based on the lyric “We run things. Things no run we”). It is unlikely that music group members would be described as lyricists, lyric writers, or lyrical contributors if their only contributions failed to meet this threshold of originality.

melody,⁸³ harmony,⁸⁴ and rhythm⁸⁵—were assumed to be sufficiently original⁸⁶ and treated as copyrightable.⁸⁷

Whether a music group grants equal coauthorship to all members who contribute to songwriting was treated as a binary fact about the band.⁸⁸ Music

83. “Melody in a musical composition consists of a succession of notes, as well as the long and short durations of individual notes, organized around the composition’s rhythm. Because melody is so salient, and is relatively unconstrained by musical convention, it is typically the principal vessel of originality in musical compositions.” GOLDSTEIN, *supra* note 10, § 2.8.

84. “Harmony gives depth to a musical composition. It might consist of two or more voices, separated by a constant span of notes, simultaneously singing the melody, or it might consist of chords — the simultaneous sounding of individual notes — harmoniously connected to each other and to the composition’s melody.” *Id.* See generally *Williams v. Gaye*, 895 F.3d 1106 (9th Cir. 2018) (finding no reversible error in an infringement verdict based substantially on rhythmic and harmonic elements). Harmonic elements appeared in the coding in the form of chords and chord progressions.

85. “Rhythm is the physical element of music, the steady beat that sets a listener’s fingers tapping. Although rhythm can be varied, the dictates of musical convention will typically constrain variety. As a result, courts rarely find originality in rhythm alone.” GOLDSTEIN, *supra* note 10, § 2.8. But see *Bridgeport Music v. UMG Recordings, Inc.*, 585 F.3d 267, 268 (6th Cir. 2009) (finding rhythmic elements copyrightable); *New Old Music Grp., Inc. v. Gottwald*, 122 F. Supp. 3d 78, 78 (S.D.N.Y. 2015) (finding drum part copyrightable); *BMS Entm’t/Heat Music LLC v. Bridges*, No. 04 Civ. 2584, 2005 WL 1593013, at *1 (S.D.N.Y. July 7, 2005) (finding rhythmic elements copyrightable); *Santrayll v. Burrell*, No. 91 CIV. 3166, 1996 WL 134803, at *1 (S.D.N.Y. Mar. 25, 1996) (finding rhythmic elements copyrightable). Rhythmic songwriting elements often appeared in the coding in the form of drum parts, basslines, and beats.

86. The originality (and thus copyrightability) of the type of contribution is discussed *supra* notes 82–83. The minimum quantity of contribution also required consideration. A recent case offers the guideline (in dicta) that this is certainly more than three or four notes, but perhaps as few as seven. See *Skidmore v. Zeppelin*, 952 F.3d 1051, 1071 (9th Cir. 2020) (en banc). In practice, sources did not reach this degree of specificity. See U.S. COPYRIGHT OFF., *supra* note 81, § 802.5(B) (“There is no predetermined number of notes, measures, or words that automatically constitutes *de minimis* authorship or automatically qualifies a work for copyright registration.”).

87. The copyrightable expression in a musical composition is typically found in its melody, harmony, rhythm, or some combination of the three. See GOLDSTEIN, *supra* note 10, § 2.8; NIMMER & NIMMER, *supra* note 48, § 2.05[D]; 2 WILLIAM F. PATRY, PATRY ON COPYRIGHT § 3:93, Westlaw (database updated Sept. 2022) (“Originality in a musical composition consists not just of melody or harmony, but also in the combination of these two in addition to any other elements, such as rhythm or orchestration.”). While melody was long privileged as the sole source of copyrightable expression in musical compositions, courts have sometimes—and perhaps increasingly—been willing to find other aspects of the work copyrightable. See Joseph P. Fishman, *Music as a Matter of Law*, 131 HARV. L. REV. 1861, 1870–73 (2018). Joint authorship cases concerning songwriting are typically decided on intent and rarely reach the question of copyrightability. Most discussion of the copyrightability of song elements has therefore arisen out of an infringement context. Infringement cases in music, involving highly fact-specific determinations, have understandably not produced a list of copyrightable and uncopyrightable elements that can be applied mechanically: the most that can be said is that certain elements may (or may not) be copyrightable. Furthermore, the infringement analysis does not itself determine copyrightability. In some instances, infringement has been found on the basis of elements that may not themselves be independently copyrightable. See *Swirsky v. Carey*, 376 F.3d 841, 848 (9th Cir. 2004) (“[T]o disregard chord progression, key, tempo, rhythm, and genre is to ignore the fact that a substantial similarity can be found in a combination of elements, even if those elements are individually unprotected.”); *Three Boys Music Corp. v. Bolton*, 212 F.3d 477, 485–86 (9th Cir. 2000), *overruled by Zeppelin*, 952 F.3d 1051.

88. The number of members with writing credit was compared to the number of members the group had in the year each song was released. If the number of member coauthors was less, then the song was coded as FALSE (per song; variable used only in computing per group level *All members are coauthors*), otherwise as TRUE (per song). The total number of TRUE songs was counted and compared to the total number of the group’s songs. When more than 50% of a group’s songs were credited to all members of the group in the year the song was released, the group was coded as *true* for the variable *All members are coauthors*. To determine the number of

groups were classified as Equal Outcomes groups if most songs were credited to all members in the group at the time each song was released; otherwise, they were coded as Rank groups following a rank approach.⁸⁹ Other factors beyond writing contribution may influence whether or not lesser contributors receive equal coauthorship credit. For this reason, I collected data on several potential

members in each group at the time their songs were released, discographies including year of release information were obtained from ALLMUSIC, <https://www.allmusic.com/> (last visited Feb. 23, 2023). Discography data was web scraped. When AllMusic did not provide details on the year in which a song was released, a web search was conducted. After this, several sources were reviewed to find the number of group members in each year songs were released; group members were listed on AllMusic, Wikipedia, group websites, and in liner notes, and were often named in interviews. The names of the writers credited with the songs of music groups in the Gold Record database were obtained from the online repertories of ASCAP and BMI. Touring and session musicians were not counted as group members. I did not consider how the boundaries of group membership are defined by group members. When is someone just a session or touring musician versus a short-lived group member? There are some natural criteria for who counts as an official group member that are dictated by genre and instrumentation. But membership is a boundary of the group as an economic unit that is shaped to some extent by relationships—a consideration I leave unexplored.

89. Based on the results of Polcz, *supra* note 3 (manuscript at 26–32), all groups that credited all members as coauthors were treated as splitting royalties equally, as this was the typical practice. Classification relied on (1) the assembling per song, (2) the number of group members, and (3) the number of coauthors credited. A song's writers are listed in several places: liner notes, on PRO registrations, and in USCO registrations. I consulted PRO registrations and validated that they correspond to USCO registrations. Courts have not recognized PRO registrations as evidence of authorship, but USCO registrations constitute “*prima facie* evidence of the validity of the copyright and the facts stated in the certificate of registration.” U.S. COPYRIGHT OFF., *supra* note 81, § 202. Therefore, USCO registrations were searched and compiled for ten songs by all music groups with uneven contributions that include all members as coauthors. The credited writers in the PRO registrations match listed coauthors in USCO registrations 99% of the time. Thirty-seven percent of the songs registered with PROs were not registered in the USCO database. See Zvi S. Rosen & Richard Schwinn, *An Empirical Study of 225 Years of Copyright Registrations*, 94 TUL. L. REV. 1003, 1030 (2020) (noting that over the course of the past thirty years, music registrations with USCO “[e]ll off a cliff to levels not seen since the 1930s”).

factors: *members*,⁹⁰ *genre*,⁹¹ *region of origin*,⁹² *decade of a group's formation*,⁹³ and *group duration*.⁹⁴

The analysis focuses on uneven-contributions groups (n = 252).⁹⁵ To investigate whether music groups' royalty split practices are associated with a difference in how much they create, the average number of albums was calculated and compared for Equal Outcomes groups versus Rank groups. Regression analysis was used to investigate whether any association remained after accounting for genre, region of origin, decade, and members (group size).

90. The size of a group's membership could influence how willing members are to include all members as equal coauthors. Particularly for Uneven contributions to songwriting music groups, as group size grows, so does the possible economic penalty for including all members as equal coauthors. To investigate whether the number of members in a music group predicts the inclusion of lesser contributors as equal coauthors, *Members* (representative group size) was generated for each group (*Two* (21%), *Three* (22%), *Four* (35%), *Five* (16%), *Six+* (6.1%)). For music groups with variable numbers of members, the lowest number of members during the group's active years was used. More than 90% of music groups had five or fewer members. The most common music group size was four members (349/1003, 35%).

91. Genre data was obtained from AllMusic's "Genres" listing for each music group. *Music Genres*, ALLMUSIC, <https://www.allmusic.com/genres> (last visited Feb. 23, 2023). AllMusic's proliferation of subgenres (over 120) is highly useful for capturing subtle commonalities across the site's more than thirty million tracks. *See id.* However, this subgenre classification scheme is too granular for the size of this study's dataset. At the same time, AllMusic's twenty-one higher-level genre classifications potentially collapse meaningful differences within the study sample of Gold Record music groups (for instance, by combining Pop and Rock into a single genre). *See id.* For this reason, I decided to group together the bands' AllMusic subgenres into the following nine genre categories: *Rock* (48%); *Latin* (2.9%); *Country* (4.4%); *Metal* (6.5%); *Punk* (2.1%); *Pop* (15%); *Reggae* (0.8%); *Hip hop*, *R&B*, *Gospel*, *Jazz* (19%); and *Electronic* (1.7%). AllMusic frequently associates artists with multiple subgenres. *See id.* In the event of a group's multiple subgenre classifications corresponding to more than one of the study genre groups, the music group was assigned to the study genre group with fewer observations.

92. Geographic regions are sometimes thought to vary in terms of attitudes that could relate to decisions about including lesser contributors as coauthors (for example Southern communalism, coastal capitalism). For this reason, the geographic regions of music groups from the United States and its territories were coded according to the location where the music group was started. Location data was obtained from Wikipedia, which was then classified into regions using the boundaries of the U.S. Divisions and Regions of the U.S. Census Bureau, widely used regional divisions for statistics and data collection: *Northeast* (17%), *Midwest* (8.4%), *West* (26%), and *South* (20%). U.S. CENSUS BUREAU, *Census Regions and Divisions of the United States*, https://www2.census.gov/geo/pdfs/maps-data/maps/reference/us_regdiv.pdf (last visited Feb. 23, 2023). As the U.S. Census Bureau does not include Puerto Rico in any census region, music groups from Puerto Rico were classified as South. All music groups originating outside the United States and its territories were classified as *Non-United States* (28%).

93. In keeping with the common practice of organizing discussions of the history of popular music around particular decades, music groups were assigned to a period spanning ten years according to the year in which their first album was released. The years in which albums were released was obtained from each group's profile on AllMusic. The Decade classifications used are *1960s and earlier* (8.9%), *1970s* (13%), *1980s* (23%), *1990s* (29%), *2000s* (18%), and *2010s and later* (8.6%). In general, no *Region* or *Decade* dominated group genesis, though there were comparatively fewer music groups prior to 1980. ALLMUSIC, *supra* note 88.

94. Group duration was the number of years from the group's formation until either 2021 (for active groups), the year of the group's break-up, or for groups that are not officially broken up but have not released an album containing new material in five or more years, the year of the last such album. The median number of years active was twenty.

95. An outlier, Led Zeppelin, was removed. Music groups classified as having *even contributions* or *some do not contribute* songwriting processes, such as The Beatles—Ringo Starr only rarely contributed to songwriting—were not included in the Study 1 analysis.

Regression analysis was again used to explore whether music groups' royalty-split practices predict their sales or Grammy Awards.⁹⁶

2. Results and Discussion

a. No Difference in Quantity of Creative Work Produced by Rank Groups and Equal Outcomes Groups

The number of albums released did not differ significantly between the Rank and Equal Outcomes groups. There was also no significant difference in the average duration of music groups (18.8 years for Equal Outcomes groups, 20.5 years for Rank groups). The typical number of albums for uneven-contributions groups overall was six (average 7.7). For Equal Outcomes groups ($n = 137$), the typical number was five (average 6.7). For Rank groups ($n = 115$), the typical number of albums was seven (average 9.1). However, neither approach to royalty splitting was associated with the quantity of albums released when these differences were investigated using regression analysis controlling for genre, region, members (group size), and decade (Table 2).

TABLE 1: DESCRIPTIVE STATISTICS – NUMBER OF GOLD RECORD GROUPS BY SONGWRITING CONTRIBUTIONS

Variable	All Groups 1959–2021	Uneven Contribution Groups 1959–2021	Uneven Contribution Groups 1990–2021
	N = 971	N = 252	N = 172
Royalty Split			
Equal Outcomes groups	374 (38.5%)	137 (54.4%)	109 (63.4%)
Rank groups	597 (61.5%)	115 (45.6%)	63 (36.6%)
Songwriting Contributions			
Even	189 (19.5%)	—	—
Uneven	252 (26.0%)	—	—
Some members do not contribute	530 (54.6%)	—	—
Decade			
1960s and earlier	87 (9.0%)	19 (7.5%)	—
1970s	125 (12.9%)	21 (8.3%)	—

96. Sales data in the music industry is skewed toward higher-earning groups. A log transformation of the *sales* variable was carried out, and the log-transformed *sales* variable was included in the regression model.

1980s	225 (23.2%)	40 (15.9%)	—
1990s	279 (28.7%)	68 (27.0%)	—
2000s	173 (17.8%)	71 (28.2%)	—
2010s and later	82 (8.4%)	33 (13.1%)	—
Members			
2	208 (21.4%)	33 (13.1%)	24 (14.0%)
3	216 (22.2%)	51 (20.2%)	32 (18.6%)
4	343 (35.3%)	111 (44.0%)	70 (40.7%)
5	149 (15.3%)	46 (18.3%)	38 (22.1%)
6+	55 (5.7%)	11 (4.4%)	8 (4.7%)
Genre			
Rock	463 (47.7%)	129 (51.2%)	92 (53.5%)
Hip Hop, R&B, Gospel, Jazz	185 (19.0%)	39 (15.5%)	28 (16.3%)
Pop	150 (15.4%)	40 (15.9%)	21 (12.2%)
Metal	60 (6.2%)	22 (8.7%)	13 (7.6%)
Country	43 (4.4%)	10 (4.0%)	7 (4.1%)
Latin	24 (2.5%)	0 (0%)	0 (0%)
Punk	21 (2.2%)	5 (2.0%)	4 (2.3%)
Electronic	17 (1.8%)	6 (2.4%)	6 (3.5%)
Reggae	8 (0.8%)	1 (0.4%)	1 (0.6%)
Region			
Northeast	162 (16.7%)	42 (16.7%)	25 (14.5%)
Midwest	79 (8.1%)	15 (6.0%)	11 (6.4%)
West	259 (26.7%)	78 (31.0%)	52 (30.2%)
South	200 (20.6%)	56 (22.2%)	48 (27.9%)
Non–United States	271 (27.9%)	61 (24.2%)	36 (20.9%)

b. Rank Groups' Music Is Comparatively Lower Quality

Rank groups have significantly fewer Grammy Awards and lower sales than Equal Outcomes groups when controlling for potential confounders, including genre, decade, and number of albums released (Table 2 and Figure 1). Grammy Awards are only won by half as many Rank groups as Equal Outcomes

groups (3% versus 6%). Rank groups also have lower sales: Equal Outcomes groups are 3.4 times more likely to be in the top 10% of Gold Record music groups for sales.⁹⁷ This analysis does not identify groups' royalty-sharing practice as a cause of lower-quality music. However, the regression models do control for certain confounders, and the results are consistent with the production of lower-quality works by Rank groups.⁹⁸ Aside from being formed more recently, which was negatively associated with sales, a music group's approach to joint authorship credit was the strongest predictor of sales while accounting for genre, region of origin, and members (Table 2).

The results suggest that co-songwriters' relative monetary rewards impact the quality but not the quantity of their groups' creative output. This finding supplies a different angle of support for the incentive theory of copyright law, which until now has focused on the absolute amount of monetary rewards copyright law channels to creators. The direction of the finding—the equal outcomes approach better promotes quality works than the rank approach—tells us that copyright law's longstanding equal outcomes approach to joint authorship may be the best default rule for songwriting collaborations. This is the first empirical result identifying an aspect of copyright law's design that gets monetary incentives right for the music industry. Part III takes up the implications for our understanding of copyright's monetary incentives and for deciding joint authorship cases.

Moreover, the direction of the finding—in favor of Equal Outcomes groups—reinforces the evidence that songwriters are operating under a different set of norms and motivations than are expected in economic contexts. The next step is to better understand the dynamics of relative rewards in creative contexts: what is driving songwriters' preference for equal outcomes splitting? Gaining further insight will help clarify the boundaries we may expect of this phenomenon, a relevant consideration for developing policy implications for joint authorship. In addition, causal insights into the psychology of equal outcomes in this creative context may generate hypotheses for future studies in other copyright industries and inform the design of incentives more generally. Studies 2 and 3a take up this inquiry using a preregistered experiment and further analyses of the Gold Record dataset with added variables. Subpart B first contextualizes and introduces the theoretical framework, Relational Models Theory.

97. The median sales metric (number of award points) for Rank groups is 2, and the upper quartile is 6.75. For Equal Outcomes groups, the median is also 2, and the upper quartile is 8. *See supra* Figure 1.

98. Of course, Gold Record music groups are proven to be capable of creating music that will generate high sales, whereas most groups that release albums will not experience such success. Without the requisite musical talent, the way songwriting royalty splits are decided is irrelevant to the quality of music a group creates.

Rock	1.4	-1.1, 3.9	0.3	0.13	- 0.53, 0.78	0.7	-0.33	- 0.91, 0.24	0.3
Hip Hop, R&B, Gospel, Jazz	-1.4	-4.5, 1.7	0.4	0.33	- 0.47, 1.1	0.4	-0.42	-1.1, 0.28	0.2
Country	- 0.27	-5.0, 4.4	>0.9	0.48	- 0.75, 1.7	0.4	-0.15	-1.2, 0.92	0.8
Metal	2.8	- 0.80, 6.4	0.13	- 0.31	-1.3, 0.64	0.5	-1.0	-1.9, -0.22	0.01 4*
Punk	3.3	-2.9, 9.5	0.3	- 0.48	-2.1, 1.1	0.6	-1.2	-2.6, 0.23	0.10
Electronic	- 0.30	-6.0, 5.4	>0.9	0.56	- 0.93, 2.1	0.5	0.74	- 0.56, 2.0	0.3
Reggae	3.3	-9.7, 16	0.6	- 0.10	-3.5, 3.3	>0.9	1.1	-1.9, 4.0	0.5
Region (ref. cat.: Northeast)									
Midwest	- 0.41	-4.3, 3.5	0.8	- 0.12	-1.1, 0.90	0.8	-0.41	-1.3, 0.48	0.4
West	0.19	-2.3, 2.7	0.9	0.18	- 0.46, 0.83	0.6	0.27	- 0.29, 0.83	0.3
South	1.7	-1.0, 4.4	0.2	0.28	- 0.43, 1.0	0.4	0.10	- 0.52, 0.72	0.8
Non- United States	0.75	-1.9, 3.5	0.6	0.45	- 0.25, 1.2	0.2	-0.35	-1.0, 0.26	0.3
Members (ref. cat.: 4)									
2	0.48	-2.4, 3.4	0.7	- 0.73	-1.5, 0.03	0.06 0	-0.66	-1.3, 0.01	0.05 4
3	-1.2	-3.5, 1.0	0.3	- 0.25	- 0.83, 0.34	0.4	-0.18	- 0.69, 0.34	0.5
5	- 0.34	-2.7, 2.0	0.8	- 0.35	-1.0, 0.27	0.3	0.14	- 0.40, 0.67	0.6
6	1.1	-3.0, 5.2	0.6	- 0.58	-1.6, 0.50	0.3	-0.25	-1.2, 0.69	0.6

* $p < 0.05$; ** $p < 0.005$.

B. THEORETICAL FRAMEWORK

The marketplace rewards us based on what we have to offer. Those who offer more valuable contributions get more compensation. Part I reported research suggesting robust support for this general principle. However, Study 1 showed the rank approach to royalty splitting, which shifts rewards to a collaboration's most significant contributors. This approach results in comparatively lower-quality music than the equal outcomes approach, which treats higher and lesser contributors as equals. It is often emphasized that music is a business: why then do songwriters deemphasize marketplace values in their splits? In this case, identifying the driver of their equal-split preference may suggest why rejecting marketplace values seems to improve the quality of their creative output. This Part's exploration of how copyright's relative reward incentives function in this one industry context, songwriting, is a step in the incremental approach scholars have embraced for charting the lay of the land of creative incentives.⁹⁹ A theoretical approach guides Studies 2 and 3a to increase the chances that general principles may be unearthed along the way.

Songwriting collaborations produce a steadily increasing share of the songs around which the music business whirls. But in a great many cases, particularly songwriting in music groups, these creative collaborations are not born out of a marketplace mindset, and, as I will later explain, initial conditions matter. Music group members are often friends before they are bandmates and business partners, both chronologically and in terms of their priorities. Their intertwined life histories help explain why the public has an appetite not only for their music, but also for their groups' origin stories.¹⁰⁰ These origin stories are interesting because when musicians are in the period of life thought of as "coming of age," their lives are often entangled beyond their shared business of the band. On *Rolling Stone's* list of the top 100 artists of all time,¹⁰¹ members of seven out of the top ten groups were friends before starting their band.¹⁰² Similarly, songwriting duos often developed out of earlier friendships; they went to the same school or lived on the same block.¹⁰³ When friends enter the music

99. See Sprigman, *supra* note 9, at 478.

100. Notable fictional representations of the early lives of music group members featured in the Gold Record database include *BOHEMIAN RHAPSODY* (Twentieth Century Fox et al. 2018), *STRAIGHT OUTTA COMPTON* (Universal Pictures et al. 2015), *JERSEY BOYS* (Four Seasons Partnership et al. 2014), *NOWHERE BOY* (Ecosse Films et al. 2009), *BACKBEAT* (Channel Four Films et al. 1994), and *THE DOORS* (Bill Graham Films et al. 1991).

101. *100 Greatest Artists*, *ROLLING STONE* (Dec. 3, 2010), <https://www.rollingstone.com/music/music-lists/100-greatest-artists-147446>.

102. *Id.* This considers music groups that primarily write their own songs—The Beatles, Velvet Underground, The Beach Boys, U2, The Ramones, The Who, and Nirvana. *Id.* The three top-ten music groups listed whose members do not have mostly prior friendships are The Rolling Stones, Led Zeppelin, and The Clash. *Id.*

103. *Top 10 Songwriting Teams*, U.S.A. SONGWRITING COMPETITION, <https://www.songwriting.net/blog/bid/28543/Top-10-Songwriting-Teams> (last visited Feb. 23, 2023). These duos include Gerry Goffin and Carole King; Jerry Leiber and Mike Stoller; Holland, Dozier, and Holland (a trio consisting of brothers and one other who was not a prior friend); and Jimmy Jam and Terry Lewis. *Id.*

business together, their prior friendships may set expectations not readily displaced by marketplace norms. As outlined below, historical observations and a contemporary psychological theory, Relational Models Theory, both imply that friends often expect equality and balance with one another. I propose this as an explanation for why songwriters may both prefer and be incentivized by equal outcomes royalty splitting.

For millennia and across cultures, “friend” has conveyed not only warmth, but also equality and unstratified status.¹⁰⁴ Confucius advised, “[h]ave no friends not equal to yourself.”¹⁰⁵ The Christian denomination the Society of Friends, which calls adherents “Friends” or “Quakers,” take their name¹⁰⁶ from a biblical passage in which Jesus of Nazareth applies the term “friends” to indicate lack of hierarchy and the equal sharing of information.¹⁰⁷ Particularly on point is Aristotle’s observation that in the context of friendship, equality means equality of outcomes, which he describes as quantitative equality:

But equality does not seem to take the same form in acts of justice and in friendship; for in acts of justice what is equal in the primary sense is that which is in proportion to merit, while quantitative equality is secondary, but in friendship quantitative equality is primary and proportion to merit secondary.¹⁰⁸

Of course, there are circumstances beyond friendships in which people prefer equal outcomes.¹⁰⁹ For the purpose of testing whether prior friendships

104. Of course, there is more to friendship than being equals. But equality in some valued respect is an important ingredient. Mendelson and Kay found that while friends’ overall benefits from a friendship were more important, friends’ reported levels of balance or imbalance in their friendships predicted unique variance in their positive feelings about the relationship. Morton J. Mendelson & Aaron C. Kay, *Positive Feelings in Friendship: Does Imbalance in the Relationship Matter?*, 20 J. SOC. & PERS. RELATIONSHIPS 101, 103 (2003). Neither this study nor those studies discussed *infra* note 109 look at whether friends share equally the rewards of any joint work when their contributions have not been equal. This research helps close that gap.

105. CONFUCIUS, THE ANALECTS 2 (James Legge trans., 2022). For a discussion of the value of equality in friendship in Confucian thought, see generally Tim Connolly, *Friendship and Filial Piety: Relational Ethics in Aristotle and Early Confucianism*, 39 J. CHINESE PHIL. 71 (2012).

106. See C.H. MIKE YARROW, QUAKER EXPERIENCES IN INTERNATIONAL CONCILIATION 3 (1978).

107. “Henceforth I call you not servants; for the servant knoweth not what his lord doeth: but I have called you friends; for all things that I have heard of my Father I have made known unto you.” *John* 15:15 (King James).

108. ARISTOTLE, THE NICOMACHEAN ETHICS 151 (David Ross trans., Oxford World’s Classics ed. 2009).

109. A series of studies conducted by Berndt investigated friendship as an independent variable in predicting adolescent subjects’ behavior in ways associated with equality. See generally Thomas J. Berndt, *Prosocial Behavior Between Friends in Middle Childhood and Early Adolescence*, 5 J. EARLY ADOLESCENCE 307 (1985). The study recruited forty American children from ages nine to thirteen. *Id.* at 310. The study found that at age thirteen (eighth graders), individuals expected their friends to strive for equality 70% of the time when tasked with allocating money. *Id.* at 314. By contrast, they expected nonfriend classmates to allocate competitively 58% of the time and equally only 23% of the time. *Id.* These studies suggest that when adolescents confront distributive decisions, they prefer to distribute equally to their friends and proportionally to nonfriends. They also expect friends to share the same goal of equality, whereas nonfriends are expected to behave competitively. The objection could be raised that perhaps such effects of friendship and equality preferences are a result of an individual difference, rather than an effect of friendship. Although this question has not been directly investigated, related work suggests this is unlikely to be the case. Studies which focused on prosocial behavior more broadly, as opposed to focusing on equality, have found that antisocial (delinquent) children and teens had

drive songwriters' preferences for inclusion and equality with respect to songwriting royalties, it is helpful to consider the commonalities, which underlie a preference for equal outcomes across contexts. Through the lens of Relational Models Theory, "friend" is one social role label among many (e.g., friend, colleague, cousin, boss, spouse, contractor) used to convey the nature, expectations, and boundaries of relationships. Underlying these various roles are four basic relationship types, two of which are most relevant for this inquiry: *Equality Matching* and *Market Pricing*.¹¹⁰ In a given relationship, the way we divide resources and make decisions often flow from one idea, or model, of how a relationship can work, around which we jointly organize our behavior, often unconsciously.¹¹¹ This facilitates social coordination. Our minds use the relational models' representations of our relationships as metadata for organizing these relationships. The models have intrinsic value grounded in human psychology—we find them to be inherently rewarding.¹¹²

Relational Models Theory holds that whether someone prefers an equal or contributions-based allocation depends upon the nature of their relationship with those with whom they are dividing.¹¹³ When we organize an aspect of a

lower overall social competence ratings and engaged in more conflict but did not differ from other children with respect to exhibiting positive behavior toward their friends. *See generally* Thomas J. Dishion, David W. Andrews & Lynn Crosby, *Antisocial Boys and Their Friends in Early Adolescence: Relationship Characteristics, Quality, and Interactional Process*, 66 CHILD DEV. 139 (1995). Another study found that the levels of altruism people exhibit toward their friends are uncorrelated with altruistic acts toward acquaintances and strangers. *See generally* Robert F. Krueger, Brian M. Hicks & Matt McGue, *Altruism and Antisocial Behavior: Independent Tendencies, Unique Personality Correlates, Distinct Etiologies*, 12 PSYCH. SCI. 397 (2001).

110. The other two models are *Communal Sharing* and *Authority Ranking*. When people compare what they have in common, they do so in the service of a moral motivation that privileges unity between people. Fiske refers to this as the Communal Sharing model (CS). *See* ALAN PAGE FISKE, *STRUCTURES OF SOCIAL LIFE: THE FOUR ELEMENTARY FORMS OF HUMAN RELATIONS* 258 (1991). When people focus on whether they outrank others and vice versa, the moral framework is hierarchy, and the model is referred to as authority ranking. In authority-ranking relationships, people are ranked by their entitlement to valued social resources, both intangible and tangible. Those with higher status have more decisionmaking authority, whereas lower-status people are expected to defer to their choices. While individuals with the superior position in authority ranking have precedence in the use of resources, they are expected to give generously to subordinates, albeit under the circumstances of their choosing. The varying ranks of individuals in an authority-ranking relationship are often reinforced and communicated symbolically through physical magnitudes such as being higher, larger, brighter, further, louder, having more, or being earlier in temporal order. *Id.* at 309.

111. People tend to mostly use one model in their interactions with a given person across different domains. *See* Nick Haslam & Alan Page Fiske, *Relational Models Theory: A Confirmatory Factor Analysis*, 6 PERS. RELATIONSHIPS 241, 246 (1999). However, this is not necessarily the case, and the interactions that constitute any given relationship can be coordinated using more than one model.

112. *See* Jana Gallus, Joseph Reiff, Emir Kamenica & Alan Page Fiske, *Relational Incentives Theory* 11 (July 21, 2021) (unpublished manuscript), <http://www.janagallus.com/s/Gallus-Reiff-Kamenica-Fiske-2021-Relational-Incentives-Theory.pdf>.

113. *See generally* FISKE, *supra* note 110. Communal-sharing relationships are characterized by feeling joined with others because we have things in common that we value. The relationships also tend to be connected with an aspect of our identity. Family relationships, particularly relationships between parents and children, are familiar communal-sharing relationships in the lives of most people. What does it mean to focus on the ways in which we are the same as others? If we focus on the ways in which we are the same, then there is no reason to distinguish between persons or to hold one person higher than another when weighing opinions on group decisions or with respect to rights to access and use group resources. This is why decisionmaking by group

relationship around maintaining balance between ourselves and another person, we are privileging the *equality matching* model.¹¹⁴ If decisions in a relationship are organized using the equality matching model, then balance in decisions is achieved by each person having one vote; or, if a decision is recurring, then taking turns can maintain balance as well. If resource allocations in a relationship are organized using the equality matching model, then balance is achieved by giving each person the same quantity of either the same things, or of different things that are treated as equivalents by the parties.

For our purposes, Relational Models Theory is useful, because when social roles are construed in terms of relational models, we gain insight into how social roles affect moral judgments such as the “fair” way to distribute a resource or

consensus is typical of communal-sharing relationships, as is taking what one wishes from a common resource without needing permission, paying, or offering something in return. Communal-sharing relationships can be formed and reinforced by actions that create closeness or that produce commonality: sharing food, touching, grooming one another, or even modifying oneself physically to create aesthetic sameness, such as by wearing a favorite sports team jersey or seeking circumcision.

114. While these are characterizations of how equality matching facilitates cooperation, the equality matching imperative of balance calls for a balance of intentional harms and punishments as well: “an eye for an eye” is a phrase emblematic of this darker side.

reward.¹¹⁵ Friendship is a prototypical equality matching relationship.¹¹⁶ Treating friendship as primarily an equality matching relationship leads to two useful predictions for the empirical investigation of friendship that follows in Studies 2 and 3a. First, friends' preferences for equal outcomes will often be independent of whether they have contributed equally. Second, friends will often prefer to divide things so that they each have the same amount, which is different than simply being generous with one another.

Equality matching predicts that a desire for equal outcomes is independent of contribution level because equality matching focuses on whether there is balance between persons. For instance, equality matching may be concerned with whether two people are allocated the same quantity of rewards, such as royalties. What is not relevant is how much the individual in question contributed to the production of the resource to be distributed. People desire their relationships with certain others to be primarily equality matching relationships.

115. This suggests that relational models are indeed connected to social roles, but relational models are deeper structures. These findings show that when we recall, replace, or confuse people with whom we are acquainted, the cognitive operations performed are carried out based on the relational-model aspects representing relationships. Our social minds treat these features as significant and distinguishing. Psychologists have used well-designed experiments to identify evidence supporting the existence of the relational models and to discern their structure as incommensurable principles, not places on a spectrum. The most persuasive evidence that the four relational models reflect the cognitive structures that create and regulate social relationships is found in several studies by Fiske and Haslam. Three studies are suggestive of discontinuous rather than dimensional relational thinking, consistent with Relational Models Theory. For example, Haslam and Fiske (1999) found that subjects' characterizations of their relationships were more closely approximated by a model with four unipolar factors (i.e., the relational models) than by a model with independent bipolar dimensions (a common structure in alternative theories of social cognition). Haslam & Fiske, *supra* note 111, at 241. Haslam and Fiske (1992) showed that these four factors are not reducible to two- or three-factor models, as those gave a worse fit with people's intuitive relational groupings. Nick Haslam & Alan Page Fiske, *Implicit Relationship Prototypes: Investigating Five Theories of the Cognitive Organization of Social Relationships*, 28 J. EXPERIM'L SOC. PSYCH. 441, 467 (1992). Haslam (1994) found suggestive evidence that relational models are a more "basic," or informative, level of description than role terms such as friend or boss. Nick Haslam, *Categories of Social Relationship*, 53 COGNITION 59, 68 (1994). The results have since been supported by another confirmatory factor analysis which, among other differences, collected responses from business school students. See Markus Vodosek, *Relational Models and Their Effects on Relationship, Process, and Task Conflict in Work Groups*, 2000 ACAD. MGMT. PROC. J1, J2-J3; see also Alan Page Fiske, *Social Schemata for Remembering People: Relationships and Person Attributes in Free Recall of Acquaintances*, 5 J. QUANTITATIVE ANTHROP. 305, 320 (1995). Other studies strongly support the contention that individuals classify acquaintances primarily according to their relational model, rather than by demographics (race, gender, age), role, or less robust relational properties (e.g., resources, communal versus exchange). See Fiske, *supra*, at 305; Alan Page Fiske, Nick Haslam & Susan T. Fiske, *Confusing One Person with Another: What Errors Reveal About the Elementary Forms of Social Relations*, 60 J. PERSONALITY & SOC. PSYCH. 656, 657 (1991); Alan P. Fiske & Nick Haslam, *The Structure of Social Substitutions: A Test of Relational Models Theory*, 27 EUR. J. SOC. PSYCH. 725, 725 (1997). Alan Page Fiske, *Social Errors in Four Cultures: Evidence About Universal Forms of Social Relations*, 24 J. CROSS-CULTURAL PSYCH. 463, 491 (1993), provides support for the existence of Relational Models Theory outside of the United States.

116. When there are resources or rewards that must be fully distributed, as in the case of royalties, roles and relationships do not map one-to-one with relational models. More than one model will commonly be applied by the parties depending on context. For example, aspects of friendship are also typically governed by communal-sharing norms.

The framework for these relationships is equality rather than optimization.¹¹⁷ There has yet to be an agreed account of what evolutionary advantage, if any, this relationship structure serves, but it is widespread and psychologically rewarding when in effect. Of course, in many situations people feel that the connection between what people have contributed and how much they receive *does* matter morally. When this matters, it is because people enact the *market pricing* model. The rank approach to royalty splitting can be regarded as an instance of market pricing. Market pricing is not limited to relationships or interactions involving compensation. People frame relations to others in terms of market pricing when, for example, they weigh the costs and benefits of a relationship or determine the duration of a prison sentence based on the seriousness of a crime.¹¹⁸ Equality matching also predicts that a desire for equal outcomes will likely not be satisfied if treated in a way that, from the vantage point of the market pricing model, could be characterized as “generous.” To someone construing a relationship in terms of equality matching, being treated “generously” may even be regarded as offensive. Relational Models Theory predicts this clash, and it does so better than any other research tradition in psychology.¹¹⁹

Two results reported in *Co-Creating Equality* are worth highlighting. First, the trend of equal royalty allocations even when contributions are not equal¹²⁰ is consistent with the hypothesis that a distinct set of norms—equality matching norms—is operating. Otherwise, we might expect most splits to be in the order

117. It is possible for group members to fail to contribute equally to songwriting and for the group to nevertheless feel that group members' contributions to the group are equal. The group may have decided that they consider the relevant units of balanced contributions to be time, effort, or personal sacrifices.

118. Those two examples highlight that ratios are central to market-pricing reasoning and that those ratios do not need to be numeric or true beyond the scope of the interaction at hand; people are often negotiating and agreeing upon equivalences between dissimilar things in ways that are temporary, situation-specific, and approximate. A range of ratios may suffice.

119. The questions of when people prefer proportionality and when they prefer equality have been investigated by the three main research traditions in distributive justice: the Justice Standards approach, the Social Value Orientations paradigm, and the Relational Models Theory. For an overview and comparison of these three paradigms, see Robert J. MacCoun & Sarah Polcz, *Integrating Three Theoretical Traditions in Distributive Justice and Social Exchange Research*, in *SOCIAL PSYCHOLOGY AND JUSTICE* 93 (E. Allan Lind ed., 2020). The Justice Standards tradition argues that people's relational goals motivate their distributive choices. *Id.* at 94. If interpersonal harmony is desired, then people prefer to split resources equally. *Id.* If productivity is prized, then allocations should reflect individuals' comparative inputs. *Id.* On the other hand, there is a trend in the Social Value Orientations studies to construe distributive preferences as stemming from individuals' varying dispositions, while still acknowledging the importance of context and culture. *Id.* at 97–98. The Justice Standards tradition is a unifying characterization of different research streams on myriad alternative principles of distributive justice but primarily focuses on proportionality (referred to in that literature as “equity”), equality, and need. For an overview and comparison of the Justice Standards tradition, the Social Value Orientations paradigm, and Relational Models Theory, see generally *id.*; EDWARD E. LAWLER, *PAY AND ORGANIZATIONAL EFFECTIVENESS: A PSYCHOLOGICAL VIEW* (1971); Karen S. Cook & Karen A. Hegtvedt, *Distributive Justice, Equity, and Equality*, 9 ANN. REV. SOCIO. 217 (1983); see Morton Deutsch, *Equity, Equality, and Need: What Determines Which Value Will Be Used as the Basis of Distributive Justice?*, 31 J. SOC. ISSUES 137, 143 (1975) (“In cooperative relations in which economic productivity is a primary goal, equity rather than equality or need will be the dominant principle of distributive justice.”).

120. Polcz, *supra* note 3 (manuscript at 38).

of 60:40 if the governing norm were to weigh contributions in dividing royalties, erring on the side of generosity. This suggests that Relational Models Theory's postulate of distinct models is better at accounting for prior results than alternative psychological concepts (e.g., altruism). Second, to the extent friendships influence royalty-splitting practices, this influence works primarily through friendships, which predate any royalty splitting. This inference is based on my prior finding that music groups and songwriting collaborations more generally do not commonly change their initial coauthorship crediting practice.¹²¹

The two studies that follow use an experiment to facilitate causal inferences as to the role of friendship in royalty splitting (Study 2), and an industry analysis to test the external validity of the experimental results (Study 3a). The results of both studies indicate that prior friendships among collaborating songwriters explain the current majority preference among Gold Record music groups for pro rata royalty splitting. This raises the question taken up in Study 3b as to whether Equal Outcomes groups' higher-quality music is attributable to friendships between group members or to the way they split royalties. I find that Equal Outcomes music groups' higher-quality music is not explained by prior friendship.

C. STUDY 2: IN THE LAB – PRIOR FRIENDSHIPS IMPACT ROYALTY SPLITS

Study 2 tested for an effect of prior friendships on songwriting royalty-split decisions in situations where collaborators' contributions are uneven. Over 600 participants were recruited, and their responses were recorded to a hypothetical songwriting scenario with two conditions. The scenario cast participants as the main songwriter in a music group, and they were asked how to fairly split songwriting royalties with their bandmate collaborator. In one condition, participants were told their bandmate was someone with whom they have a preexisting friendship; this was not the case in the other condition. The participants' responses, and their explanations as to why they made their choices, show that prior friendships can lead majority contributors to prefer equal outcomes allocations of revenue from joint work, even when a contributions-based allocation would be in their economic self-interest.

The experiment aimed to test three hypotheses.¹²² First, the *prior friendship* condition to which participants are assigned (the independent variable, *prior*

121. "A significant majority of bands (75%) did not deviate from the practice of crediting or not crediting all members as coauthors which they established in the year of their first release." Polcz, *supra* note 3 (manuscript at 35–36). Across all 1.2 million ASCAP-registered songs, frequency of collaboration—whether the collaborators cowrote one song together or one hundred—did not affect the decision to split equally. *Id.* (manuscript at 45). Relational Models Theory is silent as to whether a relational model used by a group will have an incumbency advantage if the group's activities expand to a new domain, such as by commercializing their creative output.

122. Two small pilot studies were conducted. The results and data of the pilot studies are on file with the author.

friendship/no prior friendship) was predicted to affect their royalty-allocation choices. The dependent variable was the percentage-allocation choice to self. Specifically, participants in the *prior friendship* condition were predicted to be more likely than those in the *no prior friendship* condition to prefer a 50:50 royalty split. Second, participants in the *no prior friendship* condition were predicted to be more likely than those in the *prior friendship* condition to allocate a larger percentage of royalties to themselves. Third, participants in the *prior friendship* condition were predicted to prefer 50:50 allocations more than any other allocation with the lesser-contributing prior friend; on the other hand, participants in the *no prior friendship* condition were predicted to prefer greater allocations to themselves over an equal split.

1. Methods

Six hundred thirty-one participants were recruited on Amazon Mechanical Turk, a survey platform and crowd-sourcing site, and paid to participate in the experiment.¹²³ All participants were based in the United States; male and female participants were represented equally. Participants' self-described political views were 28% conservative (somewhat to very), 19% centrist, and 53% liberal (somewhat to very).

A simple experimental design with three conditions was used. Participants all read a vignette in which they were songwriting musicians in a two-member band. In one condition, they had *no prior friendship* with the other group member (independent variable) with whom they had come to be acquainted via one of two recruitment paths for the express purpose of forming a band: either the participant had been recruited by the other musician or vice versa.¹²⁴ In the second condition, the participant had a preexisting noneconomic relationship with the other group member (*prior friendship*).¹²⁵

123. The quality of data obtained from Amazon Mechanical Turk participants is comparable to that obtained from offline recruitment. See Gabriele Paolacci, Jesse Chandler & Panagiotis G. Ipeirotis, *Running Experiments on Amazon Mechanical Turk*, 5 JUDGMENT & DECISION MAKING 411, 416–17 (2010).

124. Participants in the No Prior Friendship condition read the following prompt:

Take a moment to imagine that you play a musical instrument, and you have decided to form a band. [You respond to an advertisement placed by a professional musician who is holding auditions to find another musician to work with/You place an advertisement to hold auditions to find another musician. After auditioning some musicians you find a professional musician to work with you]. After you audition, you decide you can work with the professional musician. Your band's songs are developed when you come up with songs, and then the other musician provides suggestions on changes to make. Your band begins to generate profits, through concert ticket sales, album streaming revenue and download sales. Some of the income that is generated is called "Songwriting Royalties," each time a song is played publicly, for example on the radio. What do you think would be a fair way to split Songwriting Royalties? (The unit in answer choices is percentages).

125. Participants in the Prior Friendship condition read the following prompt:

Take a moment to imagine that you play a musical instrument and you want to form a band. Your closest friend is a musician and wants to form a band as well. You have been playing together for a while and decide to form a band. Your band's songs are developed when you come up with songs, and then your friend provides suggestions on changes to make. Your band begins to generate profits,

In both conditions, participants were told that the band's songs were developed first by the participant who would "come up with the songs," and that the other music group member then suggested changes. The band started to "generate profits, through concert ticket sales, album streaming revenue, and download sales." Participants were told that "[s]ome of the profit that is generated is called 'Songwriting Royalties,' for example each time a song is played publicly (e.g. on the radio)." They were then asked what they thought would be a fair way to split songwriting royalties from among the following eleven predetermined choices (dependent variable: allocation to *Self*, left, or *Other*, right): 0:100 Other, 10:90, 20:80, 30:70, 40:60, 50:50, 60:40, 70:30, 80:20, 90:10, 100:0. Participants were then asked why they had made the choice they made. The hypotheses were preregistered,¹²⁶ and a blinding technique was developed to be used for the preregistered analyses.¹²⁷

There were three main considerations. First, the scenario ensured that financial self-interest could not account for the results. To avoid this, the scenario was framed to place the participants in the position of the songwriter who contributed the most to the songs.¹²⁸ Major contributors who chose an equal split voluntarily incurred a penalty, sending a stronger signal about their preferences. Second, the scenario aimed to remove any strong indication that only one party had creative control over the songwriting process. It was important to separate contributions and split preferences from control considerations. Since these considerations are used in courts' jurisprudence as a justification for excluding lesser contributors from coauthorship, it would interfere with a clean read of split preferences based only on contributions and the *prior friendship* condition. Third, the scenario was designed to have the maximum discrepancy in contribution levels possible between two collaborators who still plausibly both make copyrightable contributions to the song. A high disparity between contributions should stack the odds against our hypothesis that an equal split is preferred when the parties share a prior friendship, by providing

through concert ticket sales, album streaming revenue and download sales. Some of the profit that is generated is called "Songwriting Royalties," for example each time a song is played publicly (e.g. on the radio). What do you think would be a fair way to split Songwriting Royalties? (The unit in answer choices is percentages).

126. *Royalty Split Preferences of Songwriters in Bands*, OSF REGISTRIES (May 3, 2018), <https://osf.io/2nkq5> (Stanford IRB protocol #36289). Responses were collected in April 2018.

127. See Robert J. MacCoun & Saul Perlmutter, *Blind Analysis as a Correction for Confirmatory Bias in Physics and in Psychology*, in *PSYCHOLOGICAL SCIENCE UNDER SCRUTINY: RECENT CHALLENGES AND PROPOSED SOLUTIONS* 297 (Scott O. Lilienfeld & Irwin D. Waldman eds., 2017). Row scrambling, where each respondent was temporarily assigned to a different condition, was used to blind the data. This required creating a balanced random sequence of condition assignments and then overwriting the true condition variable to avoid peeking.

128. Lesser contributors receive more with an equal allocation than a contributions-based one. Self-interest provides a reason for them to prefer equal royalty splits. The self-interest motivation needs to be ruled out of the allocation decision if we are to conclude that a preference for an equal split is due to a norm of equality between peers.

the strongest reasons not to split equally if the participant is applying contributions-based norms.

2. Results

A 50:50 royalty split was significantly more likely to be chosen by those participants in the prior friendship condition compared to the no prior friendship condition.¹²⁹ A majority¹³⁰ (67%)¹³¹ of prior friendship condition participants chose 50:50 allocations with the lesser contributor, compared to uneven allocations (Figure 2, dark bars).¹³²

Contributions-based compensation norms were expected to drive participants' allocation choices in the no prior friendship condition. But at least in this experiment, the results did not unambiguously support a dominant role for contribution-based norms. In the no prior friendship condition, a minority (47%) of participants opted to allocate royalties 50:50 compared to unevenly; this difference was not significantly lower than 50% (Figure 2, pale bars).¹³³ It is noteworthy that even in the no prior friendship condition, 50:50 was the most common choice, which had not been predicted (Figure 2).¹³⁴ For both conditions, gender and political views were not associated with participant responses.¹³⁵

129. In line with expectation, there was no significant difference between the two no prior friendship groups (you placed ad/they placed ad, $p = 0.64$); they were combined in the analysis. Pearson's chi-squared test $p < 0.001$.

130. A goodness-of-fit analysis was conducted comparing the prior friendship preferences to a triangle distribution. The difference was not significant ($p = 0.2531$), which in the context of that test is interpreted as nonrejection of our hypothesis.

131. Z-test of one proportion, $p < 0.001$.

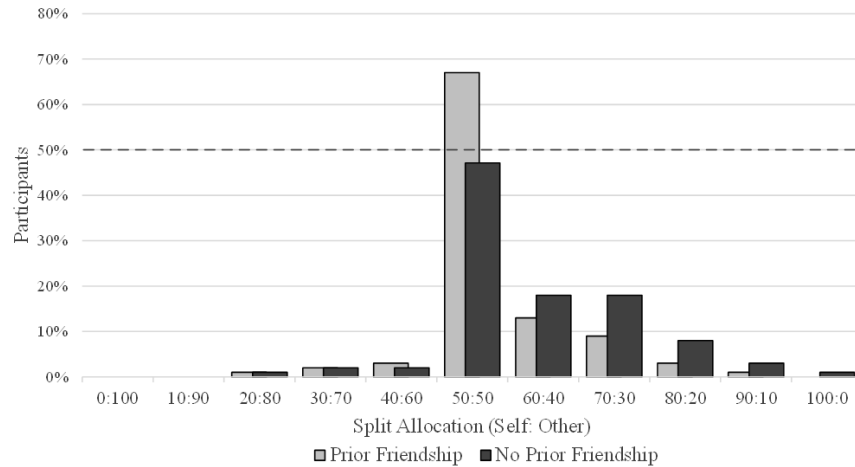
132. The preregistered hypothesis related to this result predicted that a plurality of participants in the prior friendship condition would prefer a 50:50 allocation. In accordance with the preregistered plan—first using the blinded version of the data and then the unblinded data to conduct a goodness-of-fit analysis comparing the prior friendship preferences to a triangle distribution—the difference was not significant, which in the context of that analysis meant our prediction was not rejected. After the blind data was lifted, a z-test of one proportion confirmed that the majority of prior friendship participants' preference for 50:50 allocations was significant, but this result should be regarded as exploratory, as the hypotheses for this test was not preregistered.

133. $p = 0.17$, CI 42%-52%. A second goodness-of-fit analysis was conducted to test our expectation that a plurality of respondents in the no prior friendship condition will choose allocations that distribute a larger proportion of royalties to themselves. That hypothesis was not confirmed ($p = 0.2423$).

134. A goodness-of-fit analysis was carried out comparing the no prior friendship participants' preferences to a triangle distribution; the difference was not significant, which in that context meant that our prediction that a plurality of those participants would prefer greater allocations to themselves was not confirmed.

135. Only participants' relational context condition was a significant predictor of split choice (as binary equal/unequal; nonequal allocations were binned together) in logistic regression analysis including gender and political views as covariates ($p < 0.001$). This analysis was done in addition to the preregistered analyses and should be regarded as exploratory.

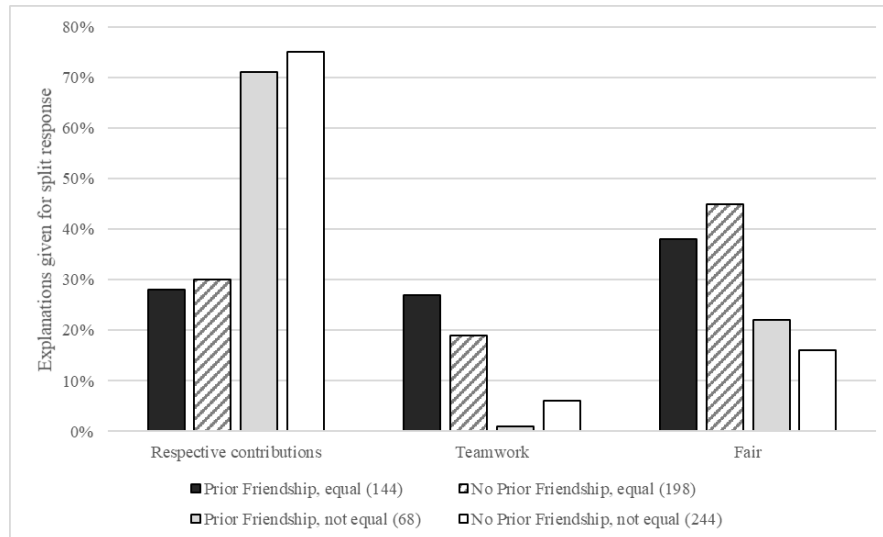
FIGURE 2: EXPERIMENT – HOW WOULD MAIN SONGWRITER (SELF) ALLOCATE ROYALTIES WITH A LESSER CONTRIBUTING COLLABORATOR?



Participants were asked why they had made the choice they did. Three common themes emerged from their short responses: the importance of respective contributions, teamwork, and fairness.¹³⁶ Irrespective of the prior friendship condition to which they were randomly assigned, more than 70% of participants who chose unequal royalty splits explained that they did so because they made the largest contributions to songwriting. They mentioned both the quantity and quality of their songwriting contributions. In a straightforward manner, many comments endorsed the perspective that there ought to be some correspondence between inputs and outputs, at least in terms of the rank order of contributions and rewards (e.g., “I did most of the work, so I should get more of the money”). The vignette characterized the participants’ and the other’s contributions in both conditions as maximally discrepant within the realm of all contributions plausibly being copyrightable. Therefore, it is notable that the participants who endorsed greater allocations to themselves in most cases chose the uneven allocation closest to splitting equally, 60:40. This is less consistent with a contributions-based reward principle being at play than a simpler preference for a nominally higher allocation.

136. See Virginia Braun & Victoria Clarke, *Using Thematic Analysis in Psychology*, 3 QUALITATIVE RSCH. PSYCH. 77, 78 (2006) (describing thematic analysis as “a foundational method for qualitative analysis”).

FIGURE 3: EXPERIMENT – THEMES FOR EXPLANATIONS GIVEN FOR SPLIT RESPONSE



Participants who chose equal splits, in both relational conditions, were less than half as likely to cite contributions as a justification than the unequal splitters. Still, about 30% did so. However, the underlying logic they invoked was of a different flavor. *Contributions* was treated as a binary factor. Contributions were made by the lesser contributors; therefore, they were entitled to share equally in the royalties.

Comments falling under the theme of *Team* were similarly binary; these conveyed that the members of a team ought to share equally in the team's royalties. To supply the unstated logical jump, members of a team are the same insofar as their status as team members, and they ought to be the same in terms of enjoying the benefits of that team-member status. These rationales arguably also presuppose that the royalties belong to the team as opposed to belonging to the major contributing team member, to be distributed at their discretion. This framing of royalties is in tension with Lockean moral intuitions about intellectual property.¹³⁷

The main reason for choosing a 50:50 allocation given by participants, again in either relational condition, was that it was “fair” (Figure 3). Typically, no further elaboration was offered; perhaps participants who chose a 50:50 split perceived this to be self-evidently fair. By contrast, participants who chose unequal splits were only about half as likely to cite fairness as a reason.

137. See ROBERT P. MERGES, JUSTIFYING INTELLECTUAL PROPERTY 8 (2011) (“There is a distinctly Lockean flavor to this [proportionality] principle At its heart it is about basic fairness: the scope of a property right ought to be commensurate with the magnitude of the contribution underlying the right.”).

3. Discussion

In the prior friendship condition, participants were cast in the role of a songwriter who had indisputably done most of the songwriting work. They were asked how they would split royalties with their friend, who had made the minimal possible creative contribution compatible with authorship credit. If participants had been framing the scenario in terms of the market pricing relational model, the parties' respective contributions would have been the most salient factor in determining the allocation of royalties between them. Depending on how participants interpreted the characterization of the other musician's small contribution, from a market pricing perspective, participants would have been justified in choosing an allocation anywhere from 70% to 100% of the royalties. The latter choice would amount to excluding their lesser contributing friend from receiving coauthorship credit.

This is not what occurred. Instead, when participants envisioned the royalty allocation to be with someone with whom they had been friends prior to their creation of a joint work, they exhibited a strong preference for ignoring the difference in contributions and choosing an equal split. This preference is consistent with the equality matching prediction that a prior equality matching relationship, in this case friendship, would lead to a preference for an equal split between the parties.

In this experiment, nearly 70% of the prior friendship songwriter pairings split royalties equally. Prior friends were 1.44 times more likely to split equally than no prior friendship songwriting teams. Although only a minority of the no prior friendship pairings split equally, this minority was not significantly different from 50%. This result, though surprising in its strength, underscores the obvious reality that in any given situation there are factors beyond the existence or nonexistence of a prior friendship that lead people to prefer equal allocations.¹³⁸ When they do, I have argued for the view that they enact the equality matching relational model. The comments by participants, when asked about their allocation choice, provide support for this. The comments by participants suggest that equality matching, and not friendship per se, is driving the choice. A 50:50 allocation seemed self-evidently fair to those who chose it, regardless of which prior friendship condition they had been assigned to. This is consistent with the equality matching relational model, from the vantage point of which fairness is defined as a balanced allocation between persons.

In domains where most creative pairings consist of individuals with prior friendship or peer relationships, a majority of creators cannot be assumed to prefer contributions-based royalty allocations. In this experiment, equality preferences consistent with the equality matching relational model dominated. Another result worthy of future investigation is that within the majority of participants preferring an equal split, a nontrivial minority expressed views to

138. See *supra* notes 104–07.

the effect that the royalties generated—principally by their own labor—belonged in the first instance to the team, the collective, rather than to themselves. This was more frequently expressed in the prior friendship condition than the no prior friendship condition.

In Study 3a, I again turn to the Gold Record music groups dataset to assess whether in real songwriting collaborations, when real money is at stake, groups sharing prior friendships prefer equal coauthorship with lesser contributors compared to groups that lack such prior friendships, even though they may become friends later.

D. STUDY 3: IN THE STUDIO, ON THE STAGE – PRIOR FRIENDSHIPS PREDICT EQUAL ROYALTY SPLIT

Study 3a investigated whether Gold Record music groups were more likely to split royalties equally if group members were friends prior to the group's formation. To do so, each music group was classified into one of three categories depending on members' relationships at the time of their group's first release. The ensuing analysis indicates that prior friendships between music group members is the strongest predictor of which groups will follow the equal outcomes model of coauthorship. Music groups with prior friendships between members are 1.5 times more likely to be Equal Outcomes groups than groups without prior friendships.

1. Study 3a

a. Methods

The Gold Record music groups were classified into three groups based on the relationships of their members at the time of each group's first record. The classifications were based on information compiled by outside coders from publicly available sources. The reliability of the sources for each music group's coding was rated, indicating that 74% of music groups were coded based on sources rated as Strong (48%) or Very Strong (26%), and 26% on sources rated as Satisfactory. Each group was given one of three codes to represent the members' relationships to one another at the time of the group's first release.¹³⁹ Each code corresponded to either the equality matching or market pricing relational model. If at least half of a music group's members at the time of its first release were relatives, it was classified as a *family* group.¹⁴⁰ These family

139. *Family*: half or more of the band's members are family members. *Prior friendship*: half or more of the band's members shared preexisting friendships. *No prior friendship*: more than half of the band's members had no prior friendships and were unrelated. Relationship information was not sought for music groups that lacked songwriting process data. Additionally, 1.85% of total search results were excluded due to a lack of relationship information. Relationship data was found for greater than 90% of valid search results.

140. Coding was according to a music group's representative relationship: music group members often have different relationships with different members of their band. The coding scheme makes a simplifying assumption that each group member can be represented by one representative relationship classification within the band.

music groups were most often sibling pairings, who were frequently, but by no means exclusively, brothers. A music group was classified as a *prior friendship* group if at least half the group's members had prior friendships, or if there were more prior friendships than family relationships and together these relationships accounted for half or more of a group's members.¹⁴¹ Otherwise, where a majority of a music group's members had no prior friendships with other members, the music group was classified as a *no prior friendship* band. In this category were music groups whose members not only met through advertisements or auditions, but also those who had prior friendships in economic contexts. If a music group's members lacked such prior friendships, or their prior friendships originated in an economic context, they were expected to govern coauthorship decisions as music group members using the market pricing relational model, consistent with a preference for distributing resources, such as royalties, in a way that tracks contributions. Based on the finding that most coauthors share equally in royalties, credited coauthors were assumed to be receiving an equal royalty split.

Four related hypotheses were explored, centering on the groups' relationship classifications, and specifically focusing on uneven contributions bands.¹⁴² First, I predicted that prior friendship and family relationships would be positively associated with Equal Outcomes coauthorship, even when taking into account factors such as the decade in which the music group was formed, its region of origin, genre of music, and number of group members.¹⁴³ Second, I predicted that family and prior friendship groups would be more likely than no prior friendship groups to be Equal Outcomes groups, even when the contributions made by a group's members were not even. Third, I predicted overall royalty-split preferences for the subgroup of music groups with each type of prior relationship: family and prior friendship groups would be associated

Where a band's members have more than one type of relationship to one another, the representative relationship type was coded on the basis of the relationship type that applied to most group members. In the event that two relationship types applied to the same number of group members, the representative relationship type was considered to be the closest relationship type out of those relationship types (there were sixty-seven such music groups). The order of relationship closeness was considered to be family, prior friendship, and no prior friendship. Closest relationship type was selected to be determinative rather than least close. This choice was based on the assumption that music groups prefer to have one split strategy applicable to all members and that if different relationship types coexist in the group that give rise to different split expectations, then members would rather extend a close relationship split preference to include other members than violate split expectations of a prior friendship by governing the group by a no prior friendship split preference, since prior friendships are more highly valued. Outside coders compiled relevant information sources and applied an initial form of the coding protocol; coder agreement was reviewed leading to a revision of the protocol, and data were recoded.

141. Krippendorff's alpha is 0.75, an acceptable result for challenging coding schemes, such as the atypical coding situation here, in which coders carried out individual research and source identification. See CHERYL GEISLER & JASON SWARTS, CODING STREAMS OF LANGUAGE: TECHNIQUES FOR THE SYSTEMATIC CODING OF TEXT, TALK, AND OTHER VERBAL DATA 171–72 (2019).

142. Bands' relationship type codes were the independent variable in logistic regression analysis to investigate whether prior friendships predict that music groups will prefer equal outcomes coauthorship. The regression analysis controlled for several other factors described in Study 1 and *Co-Creating Equality*: genre, region, members, and decade. See Polcz, *supra* note 3 (manuscript at 30–32).

143. As in Study 1, "everyone" refers to all music group members.

with the equal outcomes model, and conversely, a majority of no prior friendship groups would not. Finally, I predicted that prior friendship and family groups would be positively associated with sales.

b. Results and Discussion

The prior friendship and family groups were equally likely to share royalties equally; on this basis, they were combined in the analysis into the prior friendship category (the larger of those two groups). Once merged, prior friendship groups accounted for 68% of all groups.¹⁴⁴ Consistent with the equality matching relational model—according to which allocations are to be the same amount as received by a person's counterparts in an equality matching relationship—prior friendship groups are more likely than no prior friendship groups to credit everyone as equal coauthors at any level of contributions to songwriting (i.e., in each of the even, uneven, and some members do not contribute categories). The decade of a music group's formation was also important.¹⁴⁵ The last three decades were significantly correlated with Equal Outcomes coauthorship, so a subgroup of these groups was created for further analysis. Among uneven contributions groups post-1990, prior friendship groups were 1.5 times more likely overall to split royalties pro rata than no prior friendship groups (71% versus 46%, Figure 4).¹⁴⁶ Over the past sixty years, 61% of uneven contributions groups with prior friendships have been Equal Outcomes groups; that is to say, those bands—presumably the main songwriters—have split royalties pro rata with members who contributed less-than-equal amounts to songwriting, as long as a contribution of some kind was made that was at least minimally copyrightable (Figure 4).¹⁴⁷

Equal Outcomes groups' majority grew over the past thirty years, during which time only prior friendships predicted the pro rata royalty sharing (Table 3), a practice 71% of uneven contributions groups followed.¹⁴⁸ This industry-wide movement toward equal coauthorship is the result of at least three factors. The first is an expanding concept of what kind of contributions count as songwriting contributions.¹⁴⁹ A second factor is shifting business practices in the

144. This proportion remained stable across decades.

145. Several other factors were also predictive, albeit to a lesser degree. Compared to the typical group size of four members, music groups with two members were more likely to be Equal Outcomes groups, $p < 0.05$. Hip Hop, R&B, Gospel and Jazz, and Country were negatively associated with the Equal Outcomes model ($p < 0.05$).

146. For *uneven contributions* bands: RR 1.53, CI 1.08-1.99, $p = 0.02$; OR 2.36 CI 1.32-4.24, $p < 0.005$; Marginal Effects 0.21 CI 0.08-0.34, $p < 0.005$. For all bands: RR 1.58 CI 1.26-1.89, $p < 0.0003$; OR 2.02 CI 1.50-2.75, $p < 0.001$; Marginal Effects 0.16 CI 0.10-0.22.

147. A minimum copyrightability threshold was applied in the coding of songwriting contributions of music groups in the Gold Record dataset. This study does not make any assumptions about whether music groups were thinking in terms of copyrightability, per se.

148. This tendency is not explained by other factors the analysis took into account, including genre of music, region of origin, or members CI 62%-79% (RR 1.54 CI 1.05-2.02 $p = 0.03$; OR 2.82 CI 1.37-5.86, $p < 0.005$; Marginal Effects 0.25 CI 0.09-0.41, $p < 0.005$).

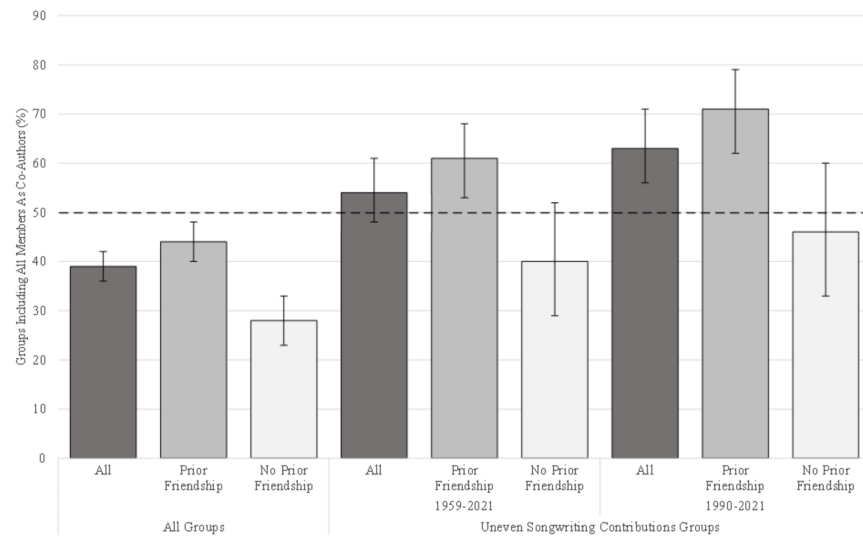
149. See Polcz, *supra* note 3 (manuscript at 44).

music industry.¹⁵⁰ A third factor is a shift in incentives, including increases in royalty rates,¹⁵¹ which have pushed songwriters to wrestle back control over their royalties from their record labels and others, in turn giving songwriters more control over how and to whom those royalties are distributed.

150. My research found an increasing prevalence over time of bands—smaller bands, and particularly duos—more inclined to divide royalties equally. An infamous scenario in the early rock era was the presence of a legally savvy producer, studio owner, or label owner working to include himself in, and exclude other contributors from, songwriting credits. See Shourin Sen, *The Denial of a General Performance Right in Sound Recordings: A Policy That Facilitates Our Democratic Civil Society?*, 21 HARV. J.L. & TECH. 233, 241–42 (2007). Music group members themselves may also have become more sophisticated over time, recognizing the benefits of equal splitting to the longevity and output of songwriting collaboration. Through interviews, a researcher has cataloged a number of reasons why some songwriters claim to favor equal splits for admittedly unequal contributions. Kim de Laat, “Write a Word, Get a Third”: *Managing Conflict and Rewards in Professional Songwriting Teams*, 42 WORK & OCCUPS. 225, 237 (2015). Such reasons include the following: (1) to “foster[] a collegial environment for what can otherwise be an awkward experience,” *id.* at 238; (2) because “having to discuss splits in a writing session can dampen the mood,” *id.*; (3) because “[k]nowing that financial issues need not factor in to [an artistic endeavor] makes for a more pleasant working environment and a potentially more rewarding songwriting session,” *id.* at 239; (4) because “[m]aintaining even splits regardless of one’s contribution helps alleviate the guilt experienced on those days when one does not contribute her fair share,” *id.*; (5) because it means that “the best song idea win[s], regardless of its authorship,” *id.* at 240; or (6) because “those who fight over royalties or demand more than their fair share typically do not get invited to future collaborations[,]” *id.* at 241. Underlying these stated reasons are power inequalities that often compel songwriters to conciliate collaborators by accepting less than their fair share for the sake of preserving the relationship or to avoid developing a reputation for being “difficult.” See *id.* at 243–46.

151. See generally *Mechanical License Royalty Rates*, U.S. COPYRIGHT OFF. (Aug. 2022), <https://copyright.gov/licensing/m200a.pdf>. From the passage of the Copyright Act of 1909 to that of the Copyright Act of 1976—a period of sixty-seven years—mechanical royalty rates remained a flat \$0.02 per song. *Id.* In the Copyright Act of 1976, these rates were increased to \$0.0275 per song (or \$0.005 per full or partial minute of playing time, whichever is greater), and were subsequently adjusted on a periodic basis thereafter. *Id.* Currently, it is \$0.091 per song, or \$0.0175 per full or partial minute of playing time, whichever is greater. *Id.*

FIGURE 4: EQUAL OUTCOMES GROUPS
BY RELATIONSHIP TYPE



This data does not provide insight into the dynamics of how music groups arrive at the decision to share equally. However, the likelihood that these decisions are primarily the result of demands on main songwriters made by other group members, as opposed to main songwriters' true preferences, seems low. In Study 2, when participants were deciding splits in the role of the main songwriter, they strongly preferred sharing equally with a prior friend in the absence of any pressure to do so, and the reasons participants provided suggest they viewed a 50:50 split as the fairest distribution. The experiment revealed a preference for splitting equally with a prior friend, even though participants were randomly assigned to the conditions, which suggests it is unlikely that the effect of prior friendship on split choices in Study 3 is due to a latent variable such as the prosociality of bands' individual members, which might otherwise explain the tendencies to have friends and to split equally. These experimental findings also suggest that this trend is unlikely to be unique to the most successful music groups, as the band in the experiment's scenario was not characterized as especially successful. In addition, as previously noted, music groups decide splits early in their lifespan, often before they know how successful they will be, and tend not to renegotiate these initial split arrangements. Interviews conducted in prior work with less financially successful music groups suggest that in some cases, when groups choose not to split equally, they are more influenced by need than greed.¹⁵² A member of an indie-pop group without a Gold Record, composed of prior friends, explained that they do not split "completely equally

152. On file with author.

because some people [in the band] have [other] jobs and have that opportunity to make money and some people like [bandmate] and I are super focused on this. We don't have that opportunity to make other money.”¹⁵³

Conversations with the main songwriters of prior friendship groups not included in the Gold Record dataset suggest that they feel that crediting all members as equal coauthors furthers their own goals for the group, such as a desire for group members to benefit equally, and that the practice fosters group cohesion.¹⁵⁴ Royalty sharing may therefore be linked to heightened motivation, priming the conditions for improved output. Such an effect would be consistent with the finding of Jackson and Padgett's analysis of the Lennon-McCartney songwriting partnership that songs cowritten by John Lennon and Paul McCartney while The Beatles' sense of group identity was strongest (pre-1967) were of higher quality than the songs they cowrote later, as they began to put more effort into their solo written works compared to their collaborations.¹⁵⁵

153. Telephone Interview with Band E. (Sept. 7, 2017). Band E. has toured with music groups in the Gold Record database, appeared at major festivals, and received critical acclaim, such as industry awards, for their albums.

154. “We're not like other bands as well because we want each other to get money . . . I wouldn't want to get ten grand and for [bandmate] to get two. Why would I? Really, you're talking about money in the end [not about who wrote the song].” Telephone Interview with Songwriter G. (Sept. 9, 2017).

155. Jeffrey M. Jackson & Vernon R. Padgett, *With a Little Help from My Friend: Social Loafing and the Lennon-McCartney Songs*, 8 PERSONALITY & SOC. PSYCH. BULL. 672, 676 (1982).

TABLE 3: LOGISTIC REGRESSION – PRIOR FRIENDSHIPS PREDICT
EQUAL ROYALTY SHARING WITH LESSER CONTRIBUTORS

Variable	All Groups 1959–2021			Uneven Contributions Groups 1959–2021			Uneven Contributions Groups 1990–2021		
	<i>log</i> (OR)	95% CI	<i>p</i> - value	<i>log</i> (OR)	95% CI	<i>p</i> - value	<i>log</i> (OR)	95% CI	<i>p</i> - value
Relationship (ref. cat.: No Prior Friendship)									
Prior Friendship	0.72	0.34, 1.1	<0.001**	1.1	0.43, 1.8	0.001**	1.0	0.22, 1.8	0.013*
Songwriting Contributions (ref. cat.: Some members do not contribute)									
Even	3.0	2.5, 3.5	<0.001**	—	—	—	—	—	—
Uneven	1.8	1.4, 2.2	<0.001**	—	—	—	—	—	—
Decade (ref. cat.: 1980s)									
1960s and earlier	-0.83	-1.6, -0.09	0.034*	-0.06	-1.4, 1.2	>0.9	—	—	—
1970s	-0.27	-0.91, 0.35	0.4	-0.10	-1.4, 1.1	0.9	—	—	—
1990s	0.48	0.02, 0.93	0.040*	1.3	0.36, 2.2	0.007*	—	—	—
2000s	0.80	0.28, 1.3	0.003**	1.3	0.34, 2.2	0.008*	—	—	—
2010s and later	0.92	0.24, 1.6	0.009*	1.7	0.52, 2.9	0.006*	—	—	—
Members (ref. cat.: 4)									
2	1.0	0.49, 1.5	<0.001**	1.3	0.23, 2.4	0.020*	0.84	-0.38, 2.2	0.2
3	-0.04	-0.48, 0.40	0.09	-0.28	-1.1, 0.52	0.5	-0.26	-1.3, 0.76	0.6
5	-0.46	-1.0, 0.05	0.079	-0.47	-1.3, 0.35	0.3	-0.70	-1.6, 0.23	0.14
6+	-1.3	-2.4, -0.33	0.013*	-0.81	-2.5, 0.68	0.3	-1.2	-3.4, 0.58	0.2
Genre (ref. cat.: Pop)									
Rock	0.30	-0.22, 0.83	0.3	0.46	-0.41, 1.3	0.3	0.49	-0.66, 1.6	0.4
Hip Hop, R&B, Gospel, Jazz	-0.88	-1.5, -0.24	0.008*	-1.2	-2.3, -0.10	0.034*	-1.1	-2.5, 0.24	0.11

Country	-1.0	-2.0, -0.07	0.036 *	-2.2	-4.1, -0.38	0.022 *	-1.5	-3.7, 0.46	0.14
Metal	0.40	- 0.41, 1.2	0.3	0.02	-1.3, 1.3	>0.9	-0.14	-1.8, 1.5	0.9
Latin	-1.2	-2.7, 0.18	0.10	—	—	—	—	—	—
Punk	0.82	- 0.34, 1.9	0.2	-0.54	-2.9, 1.6	0.6	-0.43	-2.9, 2.2	0.7
Electronic	-0.50	-1.8, 0.93	0.5	-1.5	-3.6, 0.51	0.14	-1.0	-3.2, 1.0	0.3
Reggae	0.93	-1.6, 3.9	0.5	12	-167, NA	>0.9	13	-167, NA	>0.9
Region (ref. cat.: Northeast)									
Midwest	-0.59	-1.4, 0.15	0.12	-0.33	-1.7, 1.1	0.6	-0.28	-2.0, 1.5	0.7
West	0.08	- 0.43, 0.60	0.7	-0.03	- 0.90, 0.82	>0.9	0.18	-1.4, 1.7	0.8
South	0.11	- 0.44, 0.67	0.7	0.44	- 0.51, 1.4	0.4	0.22	-1.4, 1.8	0.8
Non- United States	0.34	- 0.19, 0.88	0.2	0.25	- 0.70, 1.2	0.6	-0.15	-1.8, 1.4	0.9

* $p < 0.05$; ** $p < 0.005$.

2. Study 3b: Prior Friendship Is Unrelated to Music Quality

Rank groups' music is of lower quality than the music of Equal Outcomes groups, but perhaps music groups formed by friends make better music, explaining the correlation between better-quality music and Equal Outcomes groups. To investigate this possibility, I repeated the analyses of Study 1, controlling for Prior Friendship as a potential confounding factor.

a. Results and Discussion

The regression analyses do not support the notion that music groups with prior member friendships make better music. Prior Friendship is unrelated to Sales and Grammy Awards; it does not explain the link between equal royalty sharing and those quality metrics (Table 4).

TABLE 4: REGRESSION – PRIOR FRIENDSHIP DOES NOT PREDICT MUSIC QUALITY

Variable	Grammy Awards			Sales		
	<i>Beta</i>	<i>95% CI</i>	<i>p-value</i>	<i>Beta</i>	<i>95% CI</i>	<i>p-value</i>
Royalty Split (ref. cat.: Equal Outcomes groups)						
Rank groups	-0.48	-1.0, -0.01	0.047*	-0.61	-1.0, -0.20	0.004**
Relationship (ref. cat.: Friendship)						
No Prior Friendship	-0.24	-0.74, 0.27	0.4	0.09	-0.35, 0.54	0.7
Albums	0.02	-0.02, 0.05	0.3	0.00	-0.03, 0.03	0.9
Decade						
1960s and earlier	-0.16	-1.2, 0.87	0.8	0.95	0.04, 1.9	0.041*
1970s	1.0	0.05, 1.9	0.040*	0.57	-0.26, 1.4	0.2
1990s	-0.04	-0.73, 0.66	>0.9	-0.40	-1.0, 0.21	0.2
2000s	-0.26	-1.0, 0.46	0.5	-1.0	-1.7, -0.39	0.002**
2010s and later	-0.37	-1.2, 0.49	0.4	-1.3	-2.1, -0.58	<0.001*
Genre						
Rock	0.12	-0.54, 0.77	0.7	-0.33	-0.90, 0.25	0.3
Hip Hop, R&B, Gospel, Jazz	0.25	-0.56, 1.1	0.5	-0.39	-1.1, 0.33	0.3
Country	0.41	-0.83, 1.6	0.5	-0.12	-1.2, 1.0	0.8
Metal	-0.25	-1.2, 0.70	0.6	-1.1	-1.9, -0.23	0.013*
Punk	-0.47	-2.1, 1.1	0.6	-1.2	-2.6, 0.23	0.10
Electronic	0.53	-1.0, 2.0	0.5	0.76	-0.55, 2.1	0.3
Reggae	-0.21	-3.6, 3.2	>0.9	1.1	-1.8, 4.1	0.5
Region						
Midwest	-0.12	-1.1, 0.90	0.8	-0.41	-1.3, 0.48	0.4
West	0.18	-0.46, 0.83	0.6	0.27	-0.29, 0.83	0.3
South	0.30	-0.41, 1.0	0.4	0.09	-0.53, 0.71	0.8

Non–United States Members (ref. cat.: 4)	0.49	-0.21, 1.2	0.2	-0.37	-1.0, 0.25	0.2
2	-0.71	-1.5, 0.05	0.068	-0.67	-1.3, 0.00	0.052
3	-0.28	-0.86, 0.31	0.4	-0.17	-0.68, 0.35	0.5
5	-0.30	-0.92, 0.32	0.3	0.12	-0.42, 0.66	0.7
6+	-0.48	-1.6, 0.61	0.4	-0.29	-1.2, 0.67	0.6

* $p < 0.05$; ** $p < 0.005$.

III. POLICY AND LEGAL IMPLICATIONS

Contemporary legal scholarship, building on the empirical work of Teresa Amabile¹⁵⁶ and others, has cast doubt on the bedrock assumption underpinning American copyright law: namely, that extrinsic incentives—particularly the financial incentive provided by copyright’s limited monopoly—may not spur creative production, and may even harm it.¹⁵⁷ While empirical work within legal scholarship¹⁵⁸ and elsewhere¹⁵⁹ has complicated that reading, scholarly acceptance of the efficacy of copyright’s financial incentives is at its lowest ebb. Scholars have called for more empirical studies so that we can better grasp the effectiveness and limitations of copyright’s financial incentives for promoting creativity. This will require more empirical studies aimed at identifying where copyright’s financial incentives are working (or not), as well as more copyright-relevant, fundamental research on the psychology of incentives and creativity. The studies in Parts I and II contribute to both needs. The discussion that follows adds additional context to these contributions, develops their policy implications, and identifies paths for future inquiry beyond copyright law.

A. WHERE COPYRIGHT’S MONETARY INCENTIVES ARE WORKING: JOINT AUTHORSHIP

Extrinsic incentives may be working in the context of creative collaboration in ways that have been largely overlooked. The first study reveals a link between cocreators’ monetary rewards and improved creative output running through relative rewards. Contrary to what received doctrine would predict, loyalty predicts more royalties: compared to groups that do not, groups

156. See generally TERESA M. AMABILE, *CREATIVITY IN CONTEXT* (1996).

157. See, e.g., Eric E. Johnson, *Intellectual Property and the Incentive Fallacy*, 39 FLA. ST. U. L. REV. 623, 646–47 (2012); Mandel, *supra* note 31, at 2007–08.

158. See generally, e.g., Buccafusco & Masur, *supra* note 17.

159. See, e.g., Stephanie Plamondon Bair, *Innovation Inc.*, 32 BERKELEY TECH. L.J. 713, 728–31 (2017) (reviewing creative incentives from an organizational behaviorist perspective).

that split royalties equally among all contributing members, even among members whose contributions are small, produce higher-quality songs, as measured by song revenue and Grammy awards. Future research could explore whether causal relationships underlie the associations observed in Studies 1 and 3b between the structure of extrinsic incentives and the quality of creative output.

With respect to songwriting, these results vindicate copyright law's longstanding equal-split rule. The rank-approach trend in joint authorship jurisprudence was in part a response to the concern that majority contributors are demotivated to collaborate by the established standard of rewarding unequal collaborators equally. Study 1 failed to find support for this concern in co-songwriting. If the equal outcomes approach led to less effort by main songwriters, this might predict that Equal Outcomes groups would release less and lower-quality music than Rank groups, but they do not. There is no difference in quantity, and the music quality of Equal Outcomes groups is higher (by both overall sales and proportion of a group's releases "going Gold").

This suggests the quality of songwriting would be better promoted by ungating the equal-sharing default in the circuits where the rank approach is now followed. This can be achieved without departing dramatically from existing law. Courts could adopt one of two methods to transition back to the pre-rank approach joint authorship regime when resolving joint authorship disputes in songwriting. First, they could reinterpret the control criterion to mean control over one's own contributions.¹⁶⁰ The Ninth Circuit has been willing to embrace this theory when other evidence of joint authorship is ambiguous.¹⁶¹ By doing so, courts would refine the control policy lever that is already in use.¹⁶²

Second, courts could base an industry-specific approach to joint authorship determinations in songwriting on dicta in *Aalmuhammed v. Lee*, where the Ninth Circuit suggested that the control criterion might not be appropriate for traditional forms of joint authorship such as the words and music of a song.¹⁶³

160. This approach to control has sometimes been adopted by courts within the Ninth Circuit. See *Reinsdorf v. Skechers U.S.A.*, 922 F. Supp. 2d 866, 872 (C.D. Cal. 2013); *Morrill v. Smashing Pumpkins*, 157 F. Supp. 2d 1120, 1124 (C.D. Cal. 2001). But see *Heger v. Kiki Tree Pictures, Inc.*, No. CV 17-03810, 2017 WL 5714517, at *5 (C.D. Cal. July 24, 2017) (explicitly repudiating this interpretation); *Moi v. Chihuly Studio, Inc.*, No. C17-0853, 2019 WL 2548511, at *3 (W.D. Wash. June 20, 2019); *Beautiful Slides, Inc. v. Allen*, No. 17-cv-01091, 2018 WL 6267844, at *3 (N.D. Cal. Sept. 7, 2018).

161. See *Lopez v. Musinorte Ent. Corp.*, No. 05-15486, 2007 WL 579746, at *1 (9th Cir. Feb. 21, 2007).

162. The concept as used in this Article is derived from Dan L. Burk & Mark A. Lemley, *Policy Levers in Patent Law*, 89 VA. L. REV. 1575 (2003).

163. See *Aalmuhammed v. Lee*, 202 F.3d 1227, 1232 (9th Cir. 2000) ("It is also easy to apply the word [author] to two people who work together in a fairly traditional pen-and-ink way, like, perhaps, Gilbert and Sullivan."). Both *Childress* and *Aalmuhammed* make this claim—a narrower joint authorship determination may be unnecessary when the collaboration is "traditional," by which both courts appear to mean when contributions are perceived as relatively equal—but neither circuit has applied this standard in practice. *Childress v. Taylor*, 945 F.2d 500, 508 (2d Cir. 1991); *Aalmuhammed*, 202 F.3d at 1232. It is notable that both use joint songwriting as their exemplars of traditional collaboration: their contributions-based determination can just as easily be read as an industry-based determination. See *Childress*, 945 F.2d at 508; *Aalmuhammed*, 202 F.3d at 1232. *Childress*

Both options continue the current practice of treating joint authorship jurisprudence as if it were industry-based. However, instead of subjecting all industries to a rule best suited to the film industry, an industry-specific understanding of the meaning and appropriate application of “control” could be applied.¹⁶⁴ In adjudicating joint authorship claims, courts have a great deal of flexibility in how they apply the intent and copyrightable contribution tests.¹⁶⁵ The circuits following the rank approach have used this flexibility to allow certain works to be recognized as joint, while preventing others from being classified as such. Those circuits could also use their flexibility to apply the rank approach in ways informed by the features of different copyright industries, although to date they have not done so. Instead, they have applied the rank approach mechanically, blocking lesser contributors across industries in most circumstances. In essence, they have applied the policy levers¹⁶⁶ applicable to

in particular lists additional relationships (writer-editor and writer-researcher) that are not necessarily informed by level of contribution but do reflect industry-based norms against a presumption of coauthorship. *See* 945 F.2d at 507.

164. Additional empirical research is warranted to provide further data on the best calibration of joint authorship rules on a per-industry basis. While a shift to an industry-based approach will increase costs for parties and courts by eliminating the simplicity of a uniform rule, those costs are not comparable to the potential loss of minority creator contributions or to forcing parties into the more judicially costly realm of infringement litigation.

165. In criticizing a possible approach to industry-based tailoring via statute, Burk & Lemley contrast the patent statute with copyright legislation, arguing that “industry-specific rules and exceptions have led to a bloated, impenetrable statute that reads like the tax code.” Burk & Lemley, *supra* note 162, at 1638. Professor Joseph Liu has analyzed this phenomenon in detail. *See generally* Joseph P. Liu, *Regulatory Copyright*, 83 N.C. L. REV. 87 (2004). Regardless of the limitations that legislation has placed on the ability of courts to apply standards in the copyright context generally, the same does not hold true of joint authorship. The legislative history of the Copyright Act indicates that, in considerable part, joint authorship legislation was intended as a codification of existing common law. *See* H.R. REP. NO. 94-1476, at 120 (1976). Perhaps because joint authorship jurisprudence at the time left considerable discretion in the hands of courts, the statute offers only a broad, vague framework intended to be built upon by further common-law developments, which is indeed what occurred. Notably, joint authorship itself is undefined in the statute—its contours presumably to be determined by the application of authorship, copyrightability, and work-made-for-hire doctrines as appropriate. *See* 17 U.S.C. § 201. This makes joint authorship law fertile ground for tailoring via policy levers in a way that copyright law as a whole may not be.

166. Intent and copyrightability are the policy levers that flow most naturally from the statute and the legislative history of joint authorship law. They have been the primary means by which joint authorship claims have been adjudicated. Courts have suggested, for instance, that the intent bar would be high when coauthorship was normatively unexpected:

[A] writer frequently works with an editor who makes numerous useful revisions to the first draft, some of which will consist of additions of copyrightable expression. Both intend their contributions to be merged into inseparable parts of a unitary whole, yet very few editors and even fewer writers would expect the editor to be accorded the status of joint author.

Childress, 945 F.2d at 507. The primary motivators in courts’ manipulation of these policy levers have been dual: industry practice—specifically the practices of the film industry—and the relative amounts of authorial contribution to the work. *See* Lee, *supra* note 60, at 1240–41 (discussing efficiency gains from centralized authorship in film). Joint authorship might be better served by making these doctrinal motivations specific: policy levers in their own right. *Cf.* Rochelle Cooper Dreyfuss, *Collaborative Research: Conflicts on Authorship, Ownership, and Accountability*, 53 VAND. L. REV. 1161, 1220–22 (2000) (proposing the recognition of a “principle of proportionality” in multiple-author works). Rather than distorting the intent and copyrightability levers to prevent joint authorship law from undermining the efficient operation of the commercial film industry,

the film industry¹⁶⁷ to the entirety of joint authorship law. There is no consensus calling for the use of bright-line rules. Courts should use the flexibility granted by the Copyright Act to tailor joint authorship standards based on industry practices, including the adoption of industry-specific default rules when supported by the data. A standards-based approach tailored to industries was, and is, possible.

The prevailing scholarly answer to some courts' reluctance to apply the equal-split default has been to modify the default itself, either by replacing it with a default of proportionality,¹⁶⁸ or—harkening back to joint authorship's roots in tenancy in common—by making the default rebuttable through a showing of unequal contributions.¹⁶⁹ These approaches, while often motivated by a desire to find a workable middle ground between the equal outcomes approach and rank approach, nevertheless fall into the same trap as those courts themselves: they assume, if only implicitly, that the desire for proportional rewards is the norm across creative contexts. Together with my prior work in *Co-Creating Equality*, these findings reveal that on the contrary, distributional preferences such as proportionality will be relationship contingent in important cases.

as in *Aalmuhammed*, 202 F.3d 1227, and other cases, courts could adopt industry practice and hold that in edge cases where producers fail to secure a work for hire agreement from a comparatively minor contributor, authorship would not accrue, although tort remedies would still be available. Cf. Casey & Sawicki, *supra* note 58, at 1718–26 (using *Aalmuhammed* as an exemplar to suggest a regime that separates authorship from ownership in joint works).

167. This logic is not confined to the Ninth Circuit and has potentially been imported into the Second Circuit as well. 16 *Casa Duse, LLC v. Merkin*, 791 F.3d 247 (2d Cir. 2015), presents a variation on the *Aalmuhammed* fact pattern: what if the plaintiff, rather than an Islamic consultant who made comparatively minor (though copyrightable) contributions to *Malcolm X*, had been Spike Lee? Resurrecting the dominant author analysis from the earlier joint authorship cases, *Casa Duse* bolstered that doctrine with the control view of authorship imported from *Aalmuhammed* to determine that a film director did not have a joint authorship interest in a film or even the raw film footage itself. *Id.* at 260–61. The director was not even an author of the film, for that matter, as the court determined that film direction is (at least in some circumstances) not an act of authorship. *Id.* at 258–59. The court's stated policy concern was the potential for "swiss cheese" copyright that had been raised in other film contexts, given the multitude of potentially copyrightable contributions that go into making a commercial film. See *Garcia v. Google, Inc.*, 786 F.3d 733, 742 (9th Cir. 2015); *Aalmuhammed*, 202 F.3d at 1233; see also Anthony J. Casey & Andres Sawicki, *The Problem of Creative Collaboration*, 58 WM. & MARY L. REV. 1793, 1832 (2017) (noting *Garcia*'s evisceration of the work-made-for-hire doctrine). See generally Molly Shaffer Van Houweling, *Author Autonomy and Atomism in Copyright Law*, 96 VA. L. REV. 549, 553 (2010) (analyzing judicial concerns over the possibility of fragmented authorship rights prior to *Garcia*). It is unclear whether *Casa Duse* imported the logic of these cases solely to address the industry-specific concerns of filmmaking (or at least film producers), or if this heightened control standard will be applied to all future joint authorship determinations at the appellate level. If the former, given that the two most significant circuits for copyrightable works have adopted this approach, a film industry-specific rule may be appropriate. Subsequent citations to *Casa Duse* have not limited its holding to the film industry. See *Webber v. Dash*, No. 19-cv-610, 2021 WL 3862704, at *9 (S.D.N.Y. Aug. 30, 2021) ("Where two or more parties each contribute the requisite degree of expression to a work but do not mutually intend to be co-authors (and thus do not qualify as such), the 'dominant' author of the work is deemed the work's sole author.").

168. See, e.g., Mandel, *supra* note 58, at 249–50.

169. See *Childress*, 945 F.2d at 508; *Thomson v. Larson*, 147 F.3d 195, 202 (2d Cir. 1998).

B. THE SOCIAL CONTEXT OF RELATIVE REWARDS

Contributions-based reward divisions, whether the rank approach or the proportionality standard advocated by some scholars, are not an optimal default for the songwriting industry. Most songwriting creators are motivated by a different principle: equal outcomes. These two reward principles—contributions and equal outcomes—are not points on a spectrum that can be resolved into a compromise position. When people prefer equal outcomes, they may find a generous contribution-based allocation to be unjust and alienating. When people prefer contributions-based allocations, they may feel angry and disrespected if unequal work is rewarded equally. Part II framed creators' preferences in terms of Relational Models Theory to help clarify that these two principles are distinct and cannot be fused into a single meta principle suitable for dividing collaborators' rewards across all copyright industries. There is no cross-contextual consensus as to what is fair. Instead, the reward allocations that creative collaborators find psychologically motivating will often depend upon the implicit expectations of the relational model that structures a particular aspect of the collaborators' relationship.

In songwriting, the predominance of prior friendships between collaborators explains why royalties are so often shared equally with lesser contributors. The difference in music groups' split practices attributable to group members' prior friendships holds regardless of decade, region, and genres, spanning the spectrum of musical tastes. Economic self-interest cannot account for it. Though more work is needed, the results overall suggest that identifying social contexts may improve estimations of the impact of relative monetary rewards on creative production. It may be that monetary incentives do not impact creative production for solo-created works, or cocreated works where all creators participate on a volunteer basis such as Wikipedia. However, if some cocreators are financially rewarded for their work, then the uncompensated or lower-compensated collaborators may be demotivated: comparative financial incentives appear to matter to songwriters.

Scholars have questioned whether norms should have a role in determining the content of intellectual property law.¹⁷⁰ Notably, norms that are primarily concerned with the maintenance of relationships have been seen as irrelevant to the goal of intellectual property generation.¹⁷¹ With respect to songwriting and

170. There are two major concerns involved in the incorporation of creator preferences into IP law: the extent to which those preferences can be identified and, once identified, whether they are likely to reflect an optimal rule for the industry. See Jennifer E. Rothman, *The Questionable Use of Custom in Intellectual Property*, 93 VA. L. REV. 1899, 1947–51 (2007). Optimal norms have typically been found “in close-knit communities in which community members have ongoing relationships and in which the same types of transactions are repeatedly conducted,” an arrangement which is “not nearly as common [in IP] as in many other industries.” *Id.* at 1950. To the extent this requires viewing copyright—still less intellectual property as a whole—as a single monolithic industry, this is undoubtedly true. But viewing each copyright-producing industry as distinct, relevant commonalities can emerge on a scale larger than “small, close-knit communities.” Cf. Mark A. Lemley, *The Law and Economics of Internet Norms*, 73 CHI.-KENT L. REV. 1257, 1267 (1998).

171. See Rothman, *supra* note 170, at 1959–61.

norms concerning the distribution of financial rewards, my results suggest the opposite is true. Moreover, the connection between pro rata royalty sharing and higher-quality creative output is not dependent on a prior friendship between collaborators (Study 3b), even though equal splitting was a minority preference for no prior friendship groups.

I argue that for co-songwriting, equal coauthorship—even for lesser contributors—is the better default rule. However, in many other industries, such as film, the equal outcomes approach clearly would not work. As no single approach to joint authorship is optimal across copyright domains, the current one-size-fits-all approach should be replaced with industry-specific default rules. There are indications of industry features likely to correspond to a certain reward preference: for instance, as the number of individuals who are typically involved in creating a joint work grows, the likelihood decreases that most contributors will share preexisting friendships. Empirical work could unearth other relevant industry-based clues about prevailing reward-allocation preferences.

Defaults shape negotiations in the shadow of the law¹⁷² and ought to nudge parties in directions that promote policy aims. Joint authorship rules also ought to take into account the stickiness of initial royalty-splitting decisions—more than 75% of music groups maintain their first coauthorship crediting practice, and they tend not to change or renegotiate even if the group suffers.¹⁷³ This makes it all the more important to ensure that initial choices are well informed. Whether stickiness is similarly characteristic of initial reward distributions in other industries may be the subject of future research.

C. SOCIAL CONTEXT AND RELATIVE REWARDS BEYOND COPYRIGHT LAW

Beyond copyright law, there are other areas of intellectual property where a prevalence of prior friendships can signal that if collaborators have decisions to make about who to include or how to split the rewards of creation, we might expect contributors to benefit equally. An example is coinventorship in patent

172. The part(ies) that disfavor the default may, of course, want to contract out of it. Scholarship has examined reasons that may hinder this negotiation: notably, the possibility that a party treats the default allocation as an endowment, *see generally* Russell Korobkin, *The Status Quo Bias and Contract Default Rules*, 83 CORNELL L. REV. 608 (1998), or neglects to deviate from the default even when aware that an alternate term would be surplus-enhancing due to a “fear of adverse inferences.” *See* Ben-Shahar & Pottow, *supra* note 49, at 657–59 (discussing signaling-effect scholarship).

173. Polez, *supra* note 3 (manuscript at 35–36).

law.¹⁷⁴ Collaborators, and potential coinventors,¹⁷⁵ will in some, even many, cases have prior friendships. When this occurs, we may expect that the standards for agreeing between collaborators who is a coinventor are more permissive when there are prior friendships. Anecdotal evidence suggests that nontechnical startup cofounders are frequently listed as coinventors on key patents; nontechnical cofounders are, in some cases, friends. The tests of coinventorship provide ample opportunity for expansive interpretations to be selectively applied for prior friendship collaborators.¹⁷⁶ It is an empirical question whether such a practice, if widespread, would promote innovation in a particular industry. If these speculations are supported, then the effect of prior relationships on coinventorship raises questions about horizontal equity within the collaborative unit. Like bands, startups begin with few personnel, but unlike successful bands, successful startups add team members—who counts and who does not may shed light on patterns of disparities across groups when it comes to coinventorship.

When patentable innovations are created by small teams, it will often be in the startup world. To the best of my knowledge, the question of equity allocations has not been studied through the lens of prior friendships, although there have been studies on unequal teams.¹⁷⁷ The same prior friendships that might influence coinventorship could also influence choices that arise outside the domain of intellectual property when founding a business. This could be true both symbolically, in terms of who is included as a cofounder versus merely an “early employee,” and legally, in terms of equity divisions between founders and who obtains what share classes.¹⁷⁸ In Silicon Valley, it is not uncommon for

174. Approximately eight in ten patents are assigned to companies. See John R. Allison & Mark A. Lemley, *Who's Patenting What? An Empirical Exploration of Patent Prosecution*, 53 VAND. L. REV. 2099, 2101–02 (2000). Therefore, those in excess of 70,000 patents per year are not assigned. See *U.S. Patent Statistics Chart Calendar Years 1963 - 2020*, U.S. PAT. & TRADEMARK OFF., https://www.uspto.gov/web/offices/ac/ido/oeip/taf/us_stat.htm (May 2021). Most patents credit two or more inventors, and the number is trending upwards. See Dennis Crouch, *Continued Growth in the Number of Inventors Per Patent*, PATENTLYO (Mar. 11, 2021), <https://patentlyo.com/patent/2021/03/continued-growth-inventors.html>.

175. 35 U.S.C. § 116(a) (“When an invention is made by two or more persons jointly, they shall apply for patent jointly and each make the required oath, except as otherwise provided in this title. Inventors may apply for a patent jointly even though (1) they did not physically work together or at the same time, (2) each did not make the same type or amount of contribution, or (3) each did not make a contribution to the subject matter of every claim of the patent.”).

176. Given that collaboration in patent requires awareness of the putative coinventor’s work, the existence of a prior friendship can be informative. See *Kimberly-Clark Corp. v. Procter & Gamble Distrib. Co.*, 973 F.2d 911, 916–17 (Fed. Cir. 1992). Likewise, prior friendships may inform several of the factors outlined in *In re Reuter* for determining the validity of oral evidence of prior use, namely the eighth (“relationship between witness and alleged prior user”) and possibly the second (“interest of witness”). 670 F.2d 1015, 1021 n.9 (C.C.P.A. 1981) (citing *E.I. du Pont de Nemours & Co. v. Berkley & Co.*, 620 F.2d 1247, 1261 n.20 (8th Cir. 1980)). Lastly, prior friendships can be relevant when patent interacts with other areas of the law, such as when a fiduciary relationship exists between putative coinventors. See, e.g., *Chou v. Univ. of Chi.*, 254 F.3d 1347, 1362–63 (Fed. Cir. 2001).

177. See generally Evgeny Kagan, Stephen Leider & William S. Lovejoy, *Equity Contracts and Incentive Design in Start-Up Teams*, 66 MGMT. SCI. 4879 (2020).

178. This project was inspired by the author’s observations of equal equity splits between technology startup founders who brought skillsets to the table that would be valued very differently by the market.

cofounders to live in settings where social, household, and work boundaries are blurred or nonexistent. There is a parallel to the communities of labor among artisans in medieval Florence, who often lived and worked together as friends; this circumstance gave rise to the general partnership—a relationship of equals—as a default organizational form for those who “share the bread and the wine.”¹⁷⁹

CONCLUSION

Music is diverse, spanning from electropop to gospel, and from punk to string quartets. And yet underneath the diversity of compositions are recurring musical patterns. Music-makers are also diverse, drawn from as broad a pool of creators as exists in any creative endeavor, and yet here too a recurrent pattern emerges: when friends band together to make music, loyalties trump royalties. The social context in which creators collaborate shapes their motivations, expectations, and economic decisions. It can also usefully inform how policymakers approach the design of creators’ monetary incentives. The next steps involve exploring the size and boundary conditions of relative-reward effects on creativity. Monetary creative incentives—remixed as relative rewards—may yet be of use in furthering copyright law’s aim to improve creative production.

179. MAX WEBER, *THE HISTORY OF COMMERCIAL PARTNERSHIPS IN THE MIDDLE AGES* 89 (Lutz Kaelber trans., Rowman & Littlefield Publishers, Inc. 2003) (1889).