

COPYRIGHT'S FUNCTIONS IN COMPLEX, DIGITAL MARKETS

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ABSTRACT. Economics is a popular and useful means to generate falsifiable, non-trivial predictions on how complex systems, such as the copyright industries, evolve. For the last two decades, an overarching theme in the economics of copyright has been how the copyright system relates to digitalization. Considering the swift progression of digital innovations in the copyright industries and related markets – of late with crowdfunding, blockchain technology, non-fungible tokens, the application of learning algorithms for recommendation systems or even for the creation of works – this is unlikely to change. However, it is challenging even for experts to select useful aspects of economic theory. This paper seeks to promote a ‘cultural economics’ perspective as a toolkit for even more nuanced and useful research on copyright. Overall, it argues that economists engaging with copyright ought to acknowledge the broader function of the copyright system as a means to approximate functioning markets in the presence of *multiple* sources of market (and government) failure. The copyright system does not only lay the foundations for markets by establishing exclusive, tradable rights. It also generates standards and routines that facilitate mutually beneficial transactions under real-world conditions of incomplete information and uncertainty. Overall, this paper develops novel agenda items for economic research on copyright.

1. INTRODUCTION

The economics literature on copyright has come a long way since Ivan Png (2006) – a fellow former President of the Society for Economic Research on Copyright Issues (SERCI) like this author – published a plea for empirical research on the effects of unauthorized copying and copyright. Over the following 16 years, empirical studies have yielded many and some puzzling empirical results, as several survey articles of the empirical literature have illustrated (e.g.: Towse et al. 2008; Handke 2012a; Liebowitz 2013; Watson et al. 2015). In a conventional research process, knowledge advances in an iterative process of theorizing and empirics. This article seeks to take another step in this process, by

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extending on the theoretical repertoire conventionally invoked in the economic literature on copyright.

For at least the last two decades, an overarching topic in the economics of copyright is *how the copyright system relates to technological change*. And with technological change, we usually mean digitalization in the sense of the diffusion and increasing application of digital information and communication technology (ICT) to create, market, disseminate, and engage with copyright works. Considering the swift progression of ICT-based innovations in the copyright industries and related markets – of late with crowdfunding, blockchain technology, non-fungible tokens, the application of learning algorithms for recommendation systems or even for the creation of works – this is unlikely to change in the near future.

Economic theory has been a major reference in related debates on copyright reforms, also by legal scholars and policymakers. Indeed, economics is a useful means to generate falsifiable and non-trivial predictions on how complex systems, such as the copyright industries, evolve. However, it is challenging even for experts to select useful aspects of economic theory. This paper seeks to promote a ‘cultural economics’ perspective (e.g.: Blaug 2001; Towse 2003; Ginsburgh & Throsby 2006; Handke & Dalla Chiesa 2022) as a toolkit for even more nuanced and useful research on copyright. This comes down to two related suggestions. First, for researchers to more systematically invoke reasonably well-established idiosyncrasies of the cultural and creative sector. Second, to acknowledge the broader function of the copyright system as a means to approximate functioning markets in the presence of multiple sources of market (and government) failure. The copyright system does not only lay the foundations for markets by establishing exclusive, tradable rights. It also generates standards and routines that facilitate mutually beneficial transactions under real-world conditions of incomplete information and uncertainty.¹ Based on these two suggestions, we develop novel agenda items for economic research on copyright.

¹Arguably, the economics of copyright tends to focus on one type of transaction costs (enforcement costs of exclusive rights). The full range of transaction costs also encompasses search costs, contracting costs, and monitoring costs (Williamson 1985). In the following, I put much emphasis on contracting costs.

2. FUNDAMENTAL CHALLENGES

From a welfare economics perspective, copyright is rationalized as a costly means to mitigate market failure due to insufficient incentives for creativity and innovation. To derive policy implications, a long-term perspective is required, which considers social surplus subject to variations in: (a) the quantity and quality of creative works supplied; as well as (b) technologies for making works accessible. The numerous studies of changes in de facto copyright protection and pecuniary revenues to creators/rightsholders are an essential but also merely an intermittent step in the welfare economic assessment of copyright.

The challenge should not be underestimated. A rational copyright policy would take account of the discounted future surplus generated by innovation and creation processes, which are conducted by various parties with distinct interests and capabilities. Due to the fundamental uncertainty associated with creativity and innovation, this is a tricky question. For instance, who is to say that the marginal discounted future surplus associated with greater rewards to creators (say recording artists) exceeds that of alternative measures that benefit enterprises, who specialize in the dissemination of works (say online music services)? Furthermore, the copyright system eventually also affects the industrial organization and market power of various parties across the copyright industries, and it has become clear of late that even private-end users often generate value for others when engaging with copyright works, say by generating valuable data, by emanating useful signals of quality, or by participating in creation processes (prosumption). Economic theory helps identify such trade-offs. By itself, however, theory remains rather mute on what would constitute a reasonably efficient copyright system under specific circumstances.

Empirical evidence on the effect of copyright on creativity and innovation is required. Besides the obvious concerns with data, a fundamental challenge in this respect is that copyright systems have many scalable aspects, such as the originality threshold for protection, the duration of copyrights, or the scale and scope of exceptions and limitations of copyright. In empirical research practice, however, we are limited to observations regarding actual variations in copyright, which do not cover all feasible options.

The literature on the effects of variations in copyright strength – due to copyright law and regulation or due to the diffusion of novel copying technology – yields one particularly challenging and counter-intuitive result. There appears to be no reliable positive association between copyright strength and creativity, as indicated by the supply of new and valuable creative works. Even in the record industry, for instance, where with the diffusion of digital copying technology global turnover fell by well over 50% between 1999 and 2014 (IFPI 2022, 11),² the supply of different works kept expanding at an extraordinary pace (Handke 2006; Handke 2012b; Waldfogel 2012; Lunney 2018). The conventional scientific mode of coping with apparent falsifications of hypotheses – e.g.: that more pervasive property rights bring about greater supply – is to revise theory. Contemporary economics has developed a huge set of extensions and complications to invoke. The following section takes stock of some of these, which have been incorporated and developed in the cultural economics literature.

3. ECONOMIC CHARACTERISTICS OF COPYRIGHTS INDUSTRIES ACCORDING TO CULTURAL ECONOMICS

The copyright industries largely overlap with the cultural and creative industries (CCI). Over the years, the economic literature on CCI – cultural economics – has specified shared economic characteristics of the sector, which in their combination are rather idiosyncratic.³ Some of these characteristics are well familiar to economists engaging with copyrights. Others are not but provide a veritable treasure for research on the economics of copyright.

²The International Federation of the Phonographic Industry (IFPI) reports global recorded music industry turnover for 2014 of US\$14.2 billion, whereas in 1999, turnover has been US\$34.3 billion in inflation-adjusted terms (US\$24.1 billion in nominal terms; all nominal figures are from IFPI (2022, 11)).

³The following draws on a recent overview in Handke & Dalla Chiesa (2022). A milestone in the systematic engagement of economists with arts and culture is Baumol & Bowen (1965). Their work on the performing arts yielded the concept of Baumol’s cost diseases, according to which the relative productivity of labor-intensive industries decreases in the course of technological change. This is a case in point where economic studies generated novel insights, which became highly influential throughout the economics discipline. Besides this contested notion, further economic work on the cultural sector gave rise to so-called cultural economics, a specialization with its own JEL code (Z11). JEL code Z1 is called “Cultural Economics / Economic Sociology / Economic Anthropology”. Code Z11 is entitled “Economics of the Arts and Literature”, which most closely corresponds to contemporary cultural economics, as covered in its own textbooks (Towse 2015), several Handbooks (Towse 2003; Ginsburgh & Throsby 2006), and showcased in the Journal of Cultural Economics, established 1977 and with a current impact factor of 2.46.

To be sure, there is some overlap and mutual interdependence between various characteristics. It is hard to disentangle fundamental characteristics from their consequences. For instance, is demand uncertainty for specific works the reason for extensive product differentiation, or is it the other way around? There seems to be no single logical account along a chain of causation. It is not essential for our purposes to resolve such issues.

This section first covers some of the most familiar items in the copyright economics literature: (1) public good attributes of creative/copyright works; and (2) other foundational issues regarding the cost structure of copyright industries, durability, and product differentiation. Some further topics may already be less familiar: (3) quality uncertainty on the supplier as well as the user side; and (4) differentiated preferences and taste for variety. We then suggest several central issues in cultural economics, which are rarely explicitly addressed in the copyright economics literature: (5) socially interdependent demand formation; (6) intrinsic motivation to create and crowding effects; (7) non-use values; and (8) co-ordination problems between diverse contributors to production processes in the copyright industries due to specialization and tacitness.

In essence, much of cultural economics is simply an application of industrial organization microeconomics, in the sense that it allows for agents with imperfect and costly information (cf. Caves 2000). As we shall see, some aspects of cultural economics also push the boundaries of microeconomics, for instance regarding intrinsic motivation to work/create, or regarding socially interdependent demand formation.

3.1. Public good attributes. It hardly needs any introduction in this journal that cultural/creative works tend to have pronounced public good attributes (Towse 1997; Ginsburgh and Throsby 2006; cf. Arrow 1962). On the one hand, copyright works tend to be non-rival in consumption. Technically, use by one party hardly compromises the use of (other copies of) the same underlying work by other parties.⁴

On the other hand, reproducible aspects of cultural works tend to be non-excludable. Copying of extant works, or making use of the ideas entailed, tends to be cheap. Measures to inhibit copying and knowledge spill-overs, such as copyright protection, are costly. In a

⁴However, there may of course be greater perceived value associated with exclusive access and use.

sense, excludability needs to be produced: it entails a production process with diminishing marginal utility, which in a Pigouvian perspective on social welfare, suggests that the socially optimal level of copyright protection is not found at a level that entails complete excludability (Landes & Posner 1989; 2003).⁵

For quasi-public goods, there is relatively great potential for positive externalities, when those, who do not contribute to the costs of creation also benefit. This includes follow-up creators, who draw on copyright creations to generate new product variants. The flip side is the typical economic rationale for copyright: private incentives to invest in creation and dissemination fall below their socially desirable level. Copyright is predominantly seen as a costly means to counter market failure due to public good attributes of creative works.

3.2. Other foundational issues: the cost structure of supplying creative works, durability, and product differentiation. The production of cultural/creative/copyright works exhibits a cost structure with: (a) substantial upfront costs of creation that are at least partially sunk; and (b) relatively low and often non-increasing marginal costs of supplying additional users with access to extant works (cf. Shapiro & Varian, 1999; Boyle, 2000). Low marginal costs are associated with non-excludability since the technical costs of unauthorized copying and dissemination are also low.

Furthermore, some aspects of creative works are durable (cf. Caves 2000). Especially reproducible cultural works are hardly subject to technical deterioration. They do not decompose, or measures to sustain them are cheap.⁶ Thus, there is the potential for sustained rents over time. Like any supplier of innovative products, suppliers of creative works need to raise upfront development costs to be amortized with delayed (and uncertain) future rewards.

⁵Public good attributes are most pronounced for reproducible cultural works, which can be copied and disseminated as media content without losing much of their perceived value, and thus have the attributes of information goods. Non-reproducible cultural works – such as original, physical works of fine art or live performances – can be somewhat rival in consumption, due to congestion or deterioration by use, and tend to be more excludable. They may thus have attributes of club goods or common goods (Ostrom 2010). However, even for non-reproducible creative works some of the valuable ideas entailed can transfer to other parties without control by rightsholders, and any related activities online to engage potential users generate complementary goods and services with public good attributes.

⁶That also applies to the ideas entailed in physical and performative cultural expressions. However, specific works tend to lose much of their value when superior substitutes become available.

In addition, cultural products are differentiated, see also section 3.4. First, in markets for creative works – e.g.: recorded music, films, video games, and literature, and to a lesser extent performing and fine arts exhibits – a plethora of reasonably close substitutes tends to be available (cf. Caves 2000). Suppliers are in monopolistic competition with limited market power and with both price and product attributes as strategic items. In the presence of many close substitutes, the market value for non-exclusive access to specific copyright works tends to be quite low, so that any transaction costs can inhibit many mutually beneficial exchanges (see sections 5 and 6).

3.3. Uncertainty. Uncertainty is a pervasive issue in copyright industries. For suppliers, it is notoriously difficult to predict demand for any specific creative work before it is released to market (Baumol 1986; Caves 2000), similar to most innovative goods and services. Even after market release, demand for specific works tends to wax and wane in fads and fashions, which are hard to predict (Kretschmer et al. 1999). This makes risk management a central challenge for suppliers of creative works.⁷

Regarding uncertainty on the demand side, for potential users, specific cultural works have experience good attributes (Nelson 1970; Towse 1997; Ginsburgh and Throsby 2006). Users make any decisions to engage with specific works and to purchase with limited information. On the one hand, this concerns specific products' qualities in the individual perception of a user.⁸ On the other, this concerns the full range of options available to the user, in particular concerning the qualities of other cultural products with experience good attributes, which may be close substitutes. With risk aversity, in the aggregate the market for creative works will be smaller than in an imaginary, optimal equilibrium. With imperfect choices by users between product variants, there will also be misallocation of resources within the market.

⁷This constitutes a well-defined risk, not more radical uncertainty, since creators may lose the sunk costs of creation.

⁸Suppliers can hardly counter experience good attributes by revealing works in full before payment because willingness to pay usually decreases after complete access, even for high quality works (sometimes referred to as a disclosure paradox). One reason is that creative works are often appreciated due to their ability to surprise. Another is that some of the valuable aspects of the ideas entailed in a work can be assimilated into the memory of the user. In either case, users' willingness to pay will decrease with a first instance of full access.

Incomplete information of users can also give rise to asymmetric information problems, moral hazard and adverse selection. Nelson (1970) already emphasized the relatively strong role that brands play in markets for experience goods, an issue related to superstar effects (Rosen 1981; Adler 1985; 2006). There are many other coping mechanisms, mostly regarding quality signaling (see section III.5). Furthermore, Caves (2000) emphasizes ‘mutual ignorance’, as suppliers have no objective and precise information either on the intrinsic quality of the works they bring to market.

In contrast to direct public support to creators, the copyright system leaves market mechanisms intact. Copyright usually does little to mitigate uncertainty (cf. Snow & Watt 2005).

3.4. Other demand side issues: differentiated preferences and taste for variety.

Users of copyright works are differentiated in their preferences: it is a basic empirical observation that different users often prefer different works. Users also have taste for variety: over any extended period of time, individual preferences – as indicated by purchasing or use – change from one product variant to another (cf. Lancaster 1990). Some suggest this is due to users seeking novelty and surprise (Bianchi 2002). Others invoke so-called taste formation – where use is associated with learning – to explain why individual users prefer different works over time (Blaug 2001; Seaman 2006).

With the combination of experience good attributes (incomplete information of users) and taste for variety, users have option value: they appreciate easy access to a great diversity of copyright works, even if they never actually engage with many of the works available. Users can thus conduct wide sampling of works, and quickly respond to new interests in specific works, creators, and genres, which emerge with some degree of unpredictability. This may be one reason why online platforms disseminating creative works online put so much emphasis on offering vast repertoires, based on copyright licenses, rather than curating/sorting to attain smaller, high-quality bundles.

3.5. Socially interdependent demand formation, marketing and promotion.

Social scientists engaging with arts and culture tend to emphasize that valuation of cultural

products comes about in complex social processes (Velthuis 2005; Dekker 2015). From an economic perspective, quality uncertainty among users in markets for cultural products is associated with socially interdependent demand formation (as discussed for instance in Bikhchandani et al. (1992), Blaug (2001), Throsby (2003), and Potts et al. (2008)). A technically sophisticated and influential version of this is Bikhchandani et al. (1992): incompletely informed users may not rely on their private quality signal or the potentially biased information from suppliers. Users may also seek out relevant information (signals of quality) from other, imperfectly informed, market participants, or from certifiers such as critics. Since any market participant is subject to incomplete information, fads and fashions as well as superstar effects may come about largely due to imperfect but powerful social contagion processes, rather than intrinsic product attributes (cf. Adler 1985; 2006).⁹

The probability of periods of self-reinforcing, social contagion processes favouring a specific creative work or creator to come into effect, increase in some initial impetus. This may explain why suppliers of creative works tend to heavily invest in marketing and promotion. For instance, as a rule of thumb according to Vogel (2020; cf. Friedman 2008) in the US movie industry, marketing and promotion costs amount to about 50% of the costs of creation. In the music industry, the share of marketing and promotion in total expenditure is more varied, but often even exceeds those of the movie industry (Vogel 2020).¹⁰

In any case, much of the real-world behavior of market participants can be explained by two related quests. First, suppliers seek to emanate and cultivate signals of quality related to the specific works they supply. Second, potential users seek signals of quality before they make more costly and irreversible decisions. Rational suppliers of copyright works must strike a careful balance between inhibiting unauthorized use that substitutes for sales, and promoting attention, for instance by allowing for sampling of their works or by supplying cheap complementary goods (cf. Liebowitz 1981; 2004). As copyright

⁹Fads and fashions are wild swings in demand for specific cultural products. Superstar effects are extremely inequitable market outcomes that seem weakly related to intrinsic product qualities (Rosen 1981; Adler 2006).

¹⁰The author is not aware of reasonably general estimates regarding average shares of marketing and promotion expenditures in other CCI.

applies automatically and copyright licensing entails (transaction) costs, the copyright system inhibits some options. The important point is that in copyright industries, the related trade-offs often concern long-term and multiple product strategies (cf. Mortimer et al 2012).¹¹ Section 4 extends on the issue.

3.6. Intrinsic motivation to create and crowding. There is extensive empirical evidence of intrinsic motivation to engage with cultural production (Throsby 1994; 2001; Towse 1997; Caves 2000; Frey & Jegen 2001). Many creators seem willing to invest time and money, and to generate value for others, without a competitive pecuniary return. A common rationalization is that creators enjoy non-pecuniary benefits, such as social esteem. Regarding copyright, non-pecuniary benefits largely depend on effective attribution and modification rights, but not on exclusive rights to reproduce and disseminate, which much of the economics literature takes into focus.

The established term of ‘intrinsic motivation’ may be misleading, as such non-pecuniary benefits to creators are extrinsic, in the sense that they result from the actions of other parties. Another rationalization is that creative work is indeed intrinsically motivated, that is enjoyable in its own right, and more so than other work.¹²

Intrinsic motivation may simply entail an upward shift of the supply curve for creative works, so that it intersects with the pecuniary revenue axis at some positive value for supply.¹³ However, a staple of the cultural economics literature is crowding effects, where pecuniary and non-pecuniary incentives are not simply additive (Frey and Jegen 2001; DiGaetano and Mazza 2017). On the one hand, crowding-out may occur, where pecuniary aspects of the copyright industries diminish intrinsic motivation. For instance, there may be trade-offs between pecuniary and non-pecuniary benefits to suppliers. With effective attribution, creators may favor some unauthorized dissemination, and thus probably lower

¹¹These trade-offs are further complicated by the possibility that high (retail) prices for specific works inhibit access but may also constitute signals of quality (Kirmani & Rao 2000).

¹²Alternative explanations why creators would settle for below average earnings are risk-seeking (Rosen 1981; Benhamou 2003) or systematically biased, optimistic expectations of inexperienced creators (Towse 2001).

¹³This is likely to most affect productions that entail low costs, such as novels or some recorded music. Intrinsic motivation is less likely to sustain the supply of creative works, which require high upfront investments beyond the private means of most would-be creators, such as films and complex video games, and which require the formation and co-ordination of large teams.

pecuniary revenues, in return for greater attention and non-pecuniary benefits. Another case in point may be disproportionately adverse effects on intrinsic motivation to create, if other market participants ostensibly incur pecuniary benefits. On the other hand, crowding-in may take place, where payments or donations also have a symbolic value, demonstrating reciprocity and social esteem. Much work remains for the economics of copyright to explore the relevance of intrinsic motivation, as well as of any non-additivity of pecuniary and non-pecuniary benefits.

3.7. Non-use value. An issue related to intrinsic motivation to create is that individual users seem not only to derive utility from making use of a work themselves, irrespective of the behavior of others (Seaman 1981; 2006; Frey 1997). On the one hand, there may also be indirect use value (Andersson et al. 2012) or non-use value (Martin 1994; Hansen 1997; Frey 2003), where support for creators is motivated by expected benefits for a donor when creative works become available to other parties.¹⁴ This may motivate suppliers of complementary goods and services to support creators, for instance. Engagement with some creative works may also be a tool for social distinction for users. This ‘prestige value’ also entails some scope for self-interested donations without any specific quid pro quo other than attribution of the donor. Furthermore, support of creators by users may be more altruistic. There is considerable evidence for “psychic benefits” (Frey & Eichenberger 1995; Csikszentmihalyi 2000), where individuals value the feeling of voluntarily contributing to creative activities irrespective of any recognition from other parties. Where non-use value is at stake, public subsidies or donations seek to foster participation of third parties. This can easily conflict with strong copyright protection, which entails transaction costs and market power (prices above marginal costs). What is more, non-use value may also be subject to crowding effects, where the apparent wealth or maximization of pecuniary

¹⁴Various authors have developed different categorizations and terminologies regarding sources of value that are not reflected in conventional markets. Plottu and Plottu (2007) define indirect use value as the utility of non-excludable and non-exhaustible aspects of products, which benefit users. Non-use value accrues independently of any use/consumption of a good or service by the stakeholder in question. Some cultural economists distinguish option value, bequest value, and existence value (Martin 1994; Frey 2003; Anderson et al. 2012).

rewards by creators or other parties in the copyright industries crowds out any willingness to donate. For instance, Watercutter (2013) discusses a backlash against the use of crowdfunding campaigns by some famous, presumably wealthy, creators.

3.8. Specialization, tacitness and coordination problems. Another important economic aspect of CCI is the extent of specialization of producers along the CCI value chain, and the tacitness of much of the work involved (cf. Caves 2000). On the one hand, creative work requires individual judgements and skills, which are not fully transparent to cooperation partners and customers. Furthermore, creators often appreciate personal freedom and individual control over creative processes. The perception of uniqueness, authentic expressions, and mystique may even account for some of the allure of creators/creative works for other parties. On the other hand, creators tend to be highly specialized with limited capacities to conduct or control humdrum activities by other parties engaged in the CCI, for instance regarding team management or marketing. All of this complicates the industrial organization of many copyright industries: asymmetric information problems are not one-sided in the sense that some parties simply have more information than others, but many parties tend to have private information that is not easily available to partners along the value chain (cf. Caves 2000). This goes beyond conventional principal-agent problems since several interdependent stakeholders have private information. Co-ordination problems between various co-operating parties along CCI value chains are key to rationalize the complex industrial organization of many CCI.

4. COMPLEX MARKETS

The previous section listed apparent idiosyncrasies of much of the cultural/copyright industries and tried to relate them to each other. Arguably, this already adds up to a fertile set of theory extensions to help generate better, falsifiable explanations for puzzling empirical results or even new suggestions for experimental changes to the copyright system. This section goes one step further by discussing the overarching complexity of CCI. Here, an essential point is that basic conceptual models with rational agents but incomplete

appropriation does little to explain the industrial organization of CCI nor changes to it with digitalization.

The argument is not that complexity is unique for the CCI. Nor is it useful or feasible to reject simplification, as simplification is inevitable in any meaningful engagement with any topic. The question is whether incorporating some of the complexity of CCI can make research on the effects of copyright more productive.

4.1. Multiple transactions per market participant. Let's first consider complexity on a rather bland, quantitative level. If transaction costs are low enough, there are more mutually beneficial transactions over any extended period of time in markets for copyright works than there are users. This comes about due to (1) taste for variety/novelty, (2) extensive product searches including experimental use, and (3) low marginal costs of providing users with access. Furthermore, among creators, multiple transactions per market participant are also more productively efficient, since with low and non-increasing marginal costs and any sunk costs of creation, average costs decline when expanding the number of users catered for. However, as we will discuss below, transaction costs for ad hoc exchanges that do not make use of standardized pre-sets regarding terms, tend to be substantial. Arguably, organizational setups that help reduce average transaction costs are central in developing reasonably efficient copyright industries.

4.2. Multifarious contract options. Complexity in CCI has other, more qualitative aspects. Let's first consider some of the multifarious components of contractual arrangements between suppliers of copyright works and users when they trade works or copyright licenses.¹⁵

Any commercial contract specifies the assets to be exchanged: goods, services, or rights provided and any pecuniary payments due. Regarding each of these assets concerned, the contracting parties must agree on the timing and format of delivery, and on what types of actions by one party trigger liabilities of other parties. In the simplest case, there are two contracting parties, one of which delivers goods and services (the seller) whereas the

¹⁵For pioneering work on the interface between copyright law and private contracts, see Kretschmer et al. (2010).

other pays a specific amount as a *quid pro quo* (the buyer). In copyright industries, there is usually more to a contract.

Not even the seller-buyer dichotomy reliably holds for transactions in the creative industries. For instance, investors make initial payments in return for entitlements to future payments. Buyers of copyrights, such as publishers, incur obligations to provide related services, such as proofing or marketing. Online, end-users agree to the collection and evaluation of data regarding their engagement with works, which in the aggregate constitute valuable assets. Many specific contracts in contemporary CCI entail multiple transactions that sometimes blur the seller-buyer distinction, or simply stipulate exchanges ‘in-kind’ without any pecuniary payments between the parties.

To illustrate another complication, consider the sale of an original painting. National copyright legislation often defines inalienable (moral) rights of creators regarding for instance attribution, modification, or uses that may be seen to affect the integrity of the work or the creator’s reputation. Paradoxically, this simultaneously restricts the freedom of contracts, but also stipulates considerably greater complexity of transaction terms than a complete transfer of all rights.

Regarding reproducible creative works – such as recordings, NFTs or other technically reproducible aspects of creative works – transfers of property rights are often temporary and subject to other limitations. Copyrights are a bundle of rights, which are often separately licensed as rights to access, reproduce, make available to other parties, as well as attribution and modification. Further specifications of contract scopes and limitations include: (a) the duration of the contract; (b) the territorial scope of the contract;¹⁶ (c) exclusivity arrangements of licenses, specifying to what extent contract parties are allowed to commit to related contracts with other parties;¹⁷ (d) resale rights of any entitlements specified in the contract or replacement rights, so that contract parties can pass on responsibilities to other parties; (e) alteration or termination rights to the contract, and (f)

¹⁶For instance, end-users paying a public broadcasting license fee cannot access public broadcasting services abroad.

¹⁷For instance, this regards terms defining whether an author that committed to a publishing contract can also sell or license creative works to other parties while under contract with that publisher.

in the case of reproducible creative works, an important dimension of the good at stake is the number of copies created, which will affect trade values.

Furthermore, contracts usually specify information rights and duties of the parties involved. On the one hand, internal information rights and duties are important to help contracting parties to monitor each other's compliance. Contracting parties are often obliged to document key actions they take, as well as costs incurred, and revenues received from sales to other parties. Revenues tend to be more easily documented than costs of goods and services produced by the contracting partners themselves. Thus, revenue sharing is typical for contracts in CCI (Caves 2003). On the other hand, contracts may stipulate the external transparency of contract terms: to what extent is that information made available to other parties (for instance other market participants or regulators). Non-disclosure agreements may restrict external transparency, and in untransparent markets, parties with extensive experience regarding contract terms and their consequences enjoy asymmetric information advantages. Furthermore, user/customer data can be very valuable, especially in digital aspects of the CCI, so that a key aspect of many contracts regards the rights to access and process data on customers, and to develop and sell related services to other parties.

This incomplete survey already illustrates a wide feasible variety of contracts. There is a vast array of possible combinations, and several contract attributes are highly scalable. Therefore, there is also great scope for developing bespoke solutions, to align the incentives of parties and adequately allocate rights and obligations under specific circumstances (cf. Vogel 2020).

4.3. Copyright holders as multi-product firms. The complexity story hardly ends here, as in practice, most creators, as well as their direct or indirect contracting partners across the CCI, supply several distinct, complementary goods and services.¹⁸ First, creators supply a range of final goods and services to end-users or intermediaries. This includes performances or events, original works in non-reproducible formats, copies of

¹⁸I deliberately exclude the investment stage of production, before any marketable good has been generated, as well as sales of intermediate products in joint production processes with other firms supplying creative works or supporters of creators/creative processes in the creation stage.

works in reproducible media formats, and copyright licenses that authorize other parties to reproduce, make available, or modify works. Second, creators and rightsholders may also sell access to their audiences to suppliers of complementary goods and services, through advertising and advertorials, or user data. Third, creators and rightsholders may sell derivative goods and services, such as acknowledgements of association (sponsorship), merchandise, and NFTs. Fourth, creators often also sell participation services (involving others in enjoyable aspects of creative processes), or tuition and consultancy services.

What is more, demand for specific creative works comes about in complex social processes, where initial exposure can foster demand across all revenue streams. With interdependent demand formation and multiple, related revenue streams, ambitious suppliers will constantly consider the consequences of current prices and terms on prospective future revenues across all revenue streams. Adequate business and revenue models often combine prices for some specific products below marginal costs with profitable prices for complements (cf. Mortimer et al. 2012).

4.4. Multifarious intermediation arrangements. Furthermore, the value chain of CCI tend to involve a range of different contributors. Creators regularly co-operate with specialized firms – agents, galleries, publishers and the like – who invest in the creation process and/or provide complementary services, for instance regarding marketing. Many of the multiple goods and services generated by creators can then be directly sold to end-users, who predominantly value them for the utility derived from their own use of the work. Final creative works and related goods can also be sold or licensed to professional users, who value the product because they expect some other, usually pecuniary advantage from their engagement with it.

One case in point of professional users are follow-up creators, who pay for the right to draw on creative/copyright works by other rightsholders – as a whole or in part – to integrate them into creative works they generate themselves. Another case in point are intermediary traders: buyers and distributors of final creative works (or copies of works or

related rights) with the intent to sell these on to other parties. This includes wholesalers and retailers.

A third case in point are platform intermediaries, who in contrast to intermediary traders largely avoid advance payments or any provision of costly in-kind support to specific creators or rightsholders. There are offline platforms, such as auction houses. Especially online platforms have become much more important in many copyright industries, however. By focusing on generic services with low marginal costs, platforms have virtually unlimited capacity to cater for multiple suppliers and users. Some platforms – such as Spotify, Netflix, or Etsy – are market makers, which charge a commission fee when sales come about via their platform. Other platforms, such as Instagram or TikTok, do not charge fees on the user side but employ either an advertising revenue model, and/or finance themselves by exploiting data.

In any case, even regarding a single creator or specific work, there tend to be diverse intermediation arrangements. This is particularly pronounced when reproducible creative works are distributed and retailed via non-exclusive copyright licenses.

5. FURTHER COMPLEXITY WITH DIGITALIZATION

Digitalization has brought swift and broad changes in the CCI. For instance, digitalization reduces the costs of creation for works of a given technical quality (Liebowitz and Watt 2006; Handke 2006). Digitalization also shifts the competitive level of quality, but empirical evidence illustrates that the net effect has been an expansion of new works brought to market (Handke 2012b; Waldfogel 2012a; 2012b; 2018).

Digitalization also lowers the costs of disseminating creative works and of supplying related goods and services. There is a great variety of innovation opportunities exploited by enterprises involved with the CCI in this respect. As many ICT-based services entail some development and fixed costs combined with non-increasing marginal costs, they are indeed usually organized in much narrower oligopolies compared to the fragmented markets for creative works.

What is more, digitalization lowers the costs of interactivity between all kinds of stakeholders, fostering market research and enabling more sophisticated user-producer interaction. A corollary of this has been that especially the harvesting of user data has turned into a great source of value generation in and by the CCI, adding another dimension to the activities of many CCI firms.¹⁹ However, access to data and data processing capacities varies widely across CCI stakeholders, so that asymmetric information issues persist.

Overall, the productivity and complexity of CCIs has increased with digitalization. More suppliers offer more product variants. Users have more options and often spend more time engaging with works. The co-ordination between suppliers and users is improved, and there is greater scope for co-creation of value, rather than clearly separated roles of producers (generating value for others) and consumers (only in it for their individual benefit). However, not all transaction costs are equally reduced.

A limiting factor for these developments is contracting costs (a type of transaction costs), the costs of establishing mutually acceptable and enforceable terms for interactions between various parties in the CCI. Generating contracts is labor intensive. New methods of creating works and disseminating them require novel contracts. The sheer volume of interactions and innovation multiply those challenges.

6. OF PLATFORMS AND STANDARDS: HOW TO KEEP TRANSACTION COSTS IN CHECK?

In the early days, some hoped for digital ICT to help create frictionless markets; for a critical assessment, see Brynjolfsson & Smith (2000). In practice, things have not quite turned out that way. There are many reductions of average search, contracting, monitoring, and enforcement costs per transaction (cf. Katz 2005). Yet, the aggregate volume of transactions, the number and diversity of market participants, as well as the options for creation, dissemination, and consumption of culture have increased, too. Thus, it is far from clear whether market participants experience lower aggregate transaction costs at all, and any transaction costs will still inhibit mutually beneficial interactions.

¹⁹Creative works are increasingly important as training materials for machine learning, which is often covered in copyright exceptions or limitations.

One conventional way to reduce transaction costs is to disseminate information and increase information processing capacities of stakeholders (learning). This has its limits due to the costs involved. What is more, there are incentives of market participants to restrict the dissemination of information to protect business secrets, which also generates asymmetric information. Non-disclosure agreements are rather common in contemporary CCI.

Other conventional ways to reduce transaction costs, and contracting costs in particular, are standardization and bundling. Standardization entails the development of a small number of rules and routines to handle a great number of specific situations (David 1985; Blind 2004; Meeks & Swann 2009). Standard contract terms can help to reduce average costs per transaction. In our context, bundling means that several, separable goods are combined and jointly marketed. Bundling can reduce the number of transactions in a market of a given size (cf. McAfee et al 1989; Bakos & Brynjolfsson 1999). However, standardization and bundling entail the usual problems with centralized control. In the CCI, standardization and bundling have long traditions. Virtually any experienced CCI enterprise enters negotiations with standard contracts. Copyright management organizations (CMOs) create large bundles of licenses (blanket licenses) and develop standard terms of use. This saves transaction costs and fosters the bargaining power of rightsholders that the CMOs represent (Hollander 1984; Besen & Kirby 1992; Caves 2000; Handke & Towse 2007). More recently, online platforms, who help disseminate creative works, also bundle large repertoires and set standard terms of use for rightsholders and their representatives, users of copyright works, as well as for other parties such as advertisers.²⁰ In combination with digital ICT applications, this has enabled swift growth of many platforms, and helped expand CCI. However, the extent to which online platform services constitute reasonably contestable (and thus allocatively efficient) markets is contentious (e.g.: Rochet & Tirole 2003; Armstrong 2006; Tan & Zhou 2021; Srnicek 2017, 93ff.; Pontual Ribeiro

²⁰Online platforms make use of standardization and bundling to various degrees. There is little bundling by online matchmakers such as Amazon, ebay, or Google. By contrast, online subscription services, such as Netflix and Spotify, do conduct bundling. On the other hand, standardization of at least some terms is extremely common among online platforms engaging with the CCI, not least to comply with competition regulation (e.g.: regarding allegations of collusion with some platform users).

& Golovanova 2020). Concerns about the potential market power of platforms – as well as asymmetric information problems, as platforms enjoy more direct and comprehensive access to data than other market participants – has triggered extensive regulation in most countries.

Interestingly, the copyright system itself is a set of standards regarding what creative expressions enjoy protection, its duration, any exceptions and limitations, and so on. Like most public regulation, copyright law and regulation largely sets a generic framework, rather than tailoring for each and every work and transaction. Private contracts, especially involving platforms, tend to circumvent more established aspects of the copyright system, however. For instance, there are few spontaneous incentives for firms to incorporate exceptions and limitations of copyright law into digital rights management measures (Elkin-Koren & Salzberger 2012). Who gets to set the standards is of great import regarding the efficiency of CCI.

As one might expect from a multi-purpose technology such as digital ICT, there are also some paradoxical effects. The following is a case in point. On the one hand, digital ICT allows for more efficient customization and even personalization of contract terms, as so-called ‘smart contracting’ initiatives illustrate (Eenmaa-Dimitrieva & Schmidt-Kessen 2019; Gans 2019). On the other hand, this tailoring of terms is based on algorithms. For all their sophistication, these still constitute a limited number of routines and rules. The specific operations are usually treated as valuable business secrets, and the data used is not generally available and independently verified. Furthermore, algorithms are set up, operated and controlled by interested parties. Overall, the use of ICT-based customization hardly does away with problems regarding centralized control, non-transparency, asymmetric information, and potential market power of standard owners in novel markets for copyright works or related services.

7. CONCLUSIONS

The brilliance of economics is that it identifies common patterns in changes of complex social systems. Economic theory helps generating probable and falsifiable predictions (and

even support some normative assessments), which reach further in a speedier and somewhat more confident manner than would be feasible without it. Arguably, digitalization in the CCI is a case in point. This paper has discussed options for the economic literature on copyright to continue rising to that challenge.

Cultural economics provides useful pointers for more refined copyright research. For instance, intrinsic motivation to create and socially interdependent demand formation put into question, whether there is a reliable and strong positive association between copyright protection and incentives to supply valuable creative works. Creators may also care for non-pecuniary rewards or jostle for relative advantages by giving away valuable goods and services at prices below average costs – or even ‘for free’, avoiding the transaction costs associated with payments. One lesson from cultural economics is thus that economists engaging with copyright ought to disentangle and separately address the various aspects of the bundle of rights covered by the copyright system – rights to reproduce, make available, attribution, and modification – and investigate potential crowding effects.

More generally, economists engaging with copyright will find it helpful to routinely consider a substantial but finite and reasonably precisely developed set of idiosyncrasies of the CCI that the cultural economics literature encompasses. I thus argue for deliberate and gradual additions to the repertoire of copyright economics, which remain compatible with fundamental economics. Calls for holistic analyses are naïve. However, so far we too often ‘discover’ issues such as intrinsic motivation, crowding effects, or multiple product strategies by creators and rightholders, as an afterthought. Instead, for many research purposes it will be more efficient to acknowledge and incorporate controls for such issues in applied empirical work at the outset.

A related topic is the apparent complexity of CCI, which has all but increased with ongoing digitalization processes.²¹ The copyright system is composed of laws, statutory regulations, as well as organizational practices such as collective copyright management organizations (CMOs), which affect the multitude of contractual arrangements adopted

²¹To be sure, the complexity and transaction cost story is somewhat shoehorned into our paper. In my perspective, it is a logical extension of the cultural economics literature, which emphasizes uncertainty.

in CCI. Some of this may currently be in disarray. According to empirical work, many market participants feel overwhelmed, bitch, and hope for the best (Bulayenko et al. 2021). There is great scope for economic research on copyright to move beyond discussions of enforcement and to also address the copyright system as a framework for generating adequate standards and bundling in CCI. As Hayek (1945, 528) claimed: “Civilization advances by extending the number of important operations which we can perform without thinking about them.” Establishing exclusive rights to enable market co-ordination is only one function of the copyright system. The copyright system should also be addressed as a tool to reduce some adversities of complexity experienced by market participants.

Digitalization has sometimes aggravated those adversities. Many stakeholders find it hard to keep track of all options and to manage the associated sales and copyright licensing contracts. A specific challenge for rightsholders is to coordinate various marketing and dissemination options to maximize aggregate returns. Private contracts between rightsholders and online platforms circumvent some of the traded standard features encapsulated by copyright law, and fragmented aspects of the CCI – creators and many other rightsholders – find themselves in weak bargaining positions with more concentrated platforms (Handke 2015).

The platformization of much of the CCI also illustrate that in overwhelmingly complex markets, complexity reduction through bundling and standardization of contract terms, remains attractive. Rightsholders flock to these platforms based on highly standardized terms set by these intermediaries as take-it-or-leave-it offers with little scope for customization or even personalization. Subject to the contestability of platform services, control of those standards by commercial platform providers, CMOs, and public authorities may become a central topic for the efficiency of CCI. To start determining this, greater transparency is required to avoid the pitfalls of centralized control and asymmetric information. Here, there will be lots to do for copyright economists.²²

²²Careful readers will easily spot a couple of issues this paper has not tackled. On the one hand, it has not comprehensively surveyed empirical results. On the other hand, it features no systematic survey of the theoretical frameworks invoked in prominent contributions to the economics of copyright. Nonetheless, I am sure I have not been battling strawmen.

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