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## An institutional theory of co-production in the arts: From crowd interaction to fan production

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### **Abstract**

Previous research has identified elements of co-production and co-creation in many different art forms at various stages of the production and consumption process, to the point where it seems that co-production is ubiquitous in the arts. Co-production, as defined by Ostrom, is the contribution of resources by individuals who are not part of the same organization. This definition has contributed to an expansive use of the concept, so we refine the definition to distinguish between co-production (of market goods) in which the benefits of co-production do *or* do not accrue directly to the co-producing party. We do this by reintegrating the theory of co-production into the theory of firm (and household) production. This refinement allows us to distinguish between (unproblematic) forms of co-production which are directly in the self-interest of consumers, and (potentially problematic) forms of co-production which generate significant externalities for other consumers. We apply this framework to analyze co-production at the interface between producers and consumers in the arts, in particular the performing arts and co-production in fan-cultures. We identify the institutional solutions which are developed at this interface to incentivize and ensure co-production in the presence of significant externalities. Although our analysis is restricted to market goods, our analysis has important implications for the co-production of publicly provided goods and the required additional institutions.

### **Keywords:**

Co-production; Cultural consumption; Boundaries of the firm; Artistic organizations; Co-creation.

### Introduction

Co-production is of great relevance to the arts. Elements of co-production have been recognized across the process of production and consumption: from the inception of artistic ideas (Cooke and Lazzarretti 2008; Borowiecki 2013; Richardson 2016), to financing projects (Leyshon et al. 2016; Lember 2018), the adaptation of products (Voorberg, Bekkers, and Tummers 2015; Luonila and Jyrämä 2020), and the

consumption of finished goods in for instance fan cultures (Jenkins 2006; Choi and Burnes 2013; Booth 2017; Gamble 2018). Co-production has also been promoted as a policy tool for citizen involvement in urban settings, frequently involving the arts (Verschuere, Brandsen, and Pestoff 2012; Moore-Cherry 2017; Loeffler and Bovaird 2021). Similarly, co-production has been studied as a superior form of consumption and engagement, engaging the consumer into an experience, or even inviting them into the creative process (Chathoth et al. 2016).

Despite the extensive empirical research, there has been little theoretical work on why co-production is so prevalent in the arts. Why is it that artists, cultural organizations, and policymakers are keen to involve audiences as co-producers, or, as sometimes called, co-creators? Is it a form of self-interest which saves on resources which they would have otherwise to provide? Or is co-production just the flip side of what is traditionally called intrinsic motivation of artists? Without a theory of why co-production is chosen by consumers and firms, such questions cannot be answered. In this paper we therefore integrate the theory of (artistic) co-production into the theory of firm and household production.

This integration allows us to refine the common definition of co-production: the contribution to the process of production and value creation by individuals, groups, or organizations who are not part of the organization (Davis and Ostrom 1991; Alford 2014). This definition encompasses many cases of co-production which are in the self-interest of the consumer and therefore neither theoretically puzzling nor practically relevant. Therefore, we refine the definition to distinguish this uninteresting type from cases of co-production which create significant spillovers for other consumers, and self-interest does not secure a satisfactory level of co-production. In line with Ostrom's broader institutional approach (Ostrom 1998b; 2010), we argue that in such cases co-production is incentivized or secured through certain institutional solutions. But in the absence of such solutions co-production is likely to fail, or not reach satisfactory levels, for reasons familiar from the study of collective action problems. If the benefits of co-production mainly accrue to others, it is individually rational to free ride on the co-productive efforts of others. Therefore, to

encourage or ensure co-production additional institutional solutions are required, contribution to the institutional polycentricity of markets (Rayamajhee and Paniagua 2021).

In this paper we restrict ourselves to the interface between private producers and consumers in the arts.

Co-production at the interface of private producers and consumers should be understood as the most basic type of co-production, which is unproblematic in most instances. But there are two important types of interesting co-production which we can analyze at the interface between producers and consumers of art. The first type is when there is jointness of consumption, that is where products are consumed alongside others, such as is common in the performing arts (Olson 1965; V. Ostrom 1975).<sup>1</sup> In these instances, the co-production of one consumer has (potentially) significant effects for other consumers, whether negative or positive.

The second type of co-production at the interface of producers and consumers happens at greater distance from the artistic firms, in fan cultures and online communities. It occurs at the initiative of consumers, outside the scope of control of the firm. In the case of fan-production, consumers tend to develop the original product in unexpected or undesired directions. Although it is sometimes beneficial to the firm, this type of co-production can also be harmful to (reputation of) the firm, or the public organization trying to foster it. The analysis of this type of co-production provides further insight into the way in which an economically founded analysis can illuminate the rivalrous and cooperative dimensions of co-production.

In the first section we outline our refinement of the theory of co-production by (re-)integrating it into the theory of firm (and household) production. In the second section we distinguish between two types of co-production and examine existing empirical studies. In the third section we analyze co-production for artistic goods characterized by jointness of consumption. In the fourth section we discuss fan production.

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<sup>1</sup> It bears repeating that jointness of consumption is different from non-rivalry often invoked in the welfare economics of the arts. Non-rivalry refers to the fact that one individual's consumption does not diminish the value for other, jointness of consumption refers to the fact that goods are consumed collectively due to characteristics of the good.

## 1. Co-Production and the theory of firm and household production

Co-production in the arts has been used to refer to situations where multiple stakeholders work together to develop or adapt a product or service, to find ways to finance a project in early stage, or to increase the consumer value of cultural end-products and experiences. As such, co-production adds a dimension to an approach rooted in firms and contracts, as theorized for the creative industries by Caves (2000). Practices of collaboration, conceptualized as co-production, involve actors from the supply side and the demand side, and therefore decenter the role of the firm and formal contracts in production.

Elinor Ostrom defined co-production as “the process through which inputs used to produce a good or service are contributed by individuals who are not ‘in’ the same organization” (Ostrom 1996, 1073). Even if we restrict co-production, as we do in this article, to instances of co-production between producers and consumers, it remains an encompassing definition. Alford (2014) adopted it to illustrate what fire prevention entails in a city like Melbourne. Fire prevention involves the Metropolitan Fire Emergency Services Board, the owners of the properties who notify them and install devices like smoke-detectors and small fire extinguishers. This seems fine, but then he goes on to include the following actors as co-producers of fire prevention: “telecommunications operators dispatching fire trucks expeditiously; road authorities constructing accessible streets; and water companies situating and maintaining fire hydrants” (Alford 2014, 302). This clearly cannot be what we mean by co-production, it is not a term meant to capture entire services networks or value chains. And although such a broadening might be warranted, it is clearly at odds with the spirit of the work of Ostrom.

Ostrom’s work is rooted in institutional economics and the Coasean way of thinking. When she imagined a relationship between two parties which are not in the same organization, she was referring to co-production outside contractual relationships (Paniagua and Rayamajhee 2022). Telecommunications operators and water companies are compensated through contracts for their services. Granted, Alford’s

example is slightly more complicated, because a service like road construction is typically provided by public agencies. But co-production should not refer to the provision of goods or services of one organization as agreed upon through private or public contracts, a phenomenon present everywhere in the economy and already well understood by the firms and contracts perspective. To further specify the definition, we should therefore make clear that the co-producing individual or organization should not be contractually compensated for its services.

This does not fully solve the issue, because the expansion of the concept of co-production is also directly impacted by the stretching of the concept of the good or service. These dangers are quite well perceived by Agarwal: “would my printing a boarding pass at an airline kiosk or using the Internet to buy an airline ticket make me a co-producer in the transportation business? I hardly think so. However, in public service, beginning in public safety in the 1970s, we have taken a rather expansive view of the term (Agarwal 2013, 702). Brandsen and Honingh expand: “Daily teeth-brushing helps the dentist do his work and ultimately saves public money. Sucking a lollipop does the reverse. Whether it is useful to cover it all under the label of co-production is another matter” (Brandsen and Honingh 2018, 11). To solve these anomalies, we must be clearer about what it means to consume or produce a particular good and service, rather than to freely use expansive ‘service definitions,’ which rob co-production of its specificity.

Instead of asking who contributes to oral health, or what it takes to travel from A to B, which are comprehensive notions of ‘the good’ in question, we should focus on what the flight company or dentist offers quite directly. We can do this by focusing on the agreement between actors about the extent of the service, as is common in the economic literature on contracts. Doing so will make us realize that firms face a trade-off here, they can provide a more comprehensive service for which they will typically charge a higher price, or they can provide a less comprehensive service and rely on the inputs of the consumer. This is a simple trade-off, in which the extent to which firms will make their service more comprehensive depends on the preferences of consumers, and the relative efficiency of each party. If a book lover

purchases a new novel, they understand they will have to (co-)produce the experience by reading it, but this is clearly in the self-interest of the consumer. In case consumers do not think they value the experience sufficiently, they will not purchase the book. If the consumer is in a better position to make the contribution cheaply, the firm is more likely to offer the less comprehensive service.<sup>2</sup>

The consumer will be faced with a variety of products which require different degrees of additional input and based on their own endowments (money, time, skills) and preferences will make a choice about which of these products is the most attractive. In this sense the situation at the interface between the firm and consumers is like that between two firms, in which a firm decides to 'make or buy.' To illustrate with a simple example from outside the arts, we can imagine a consumer who is interested in having dinner. The consumer could plant seeds, grow ingredients on their own vegetable patch and cook from scratch, or they could buy semi-prepared ingredients and cook them, or they can have dinner in a restaurant, with a wide range of options in between. In the first case, the production will be done (nearly) completely by the consumer producer, in the final case almost completely by the 'traditional' producer. Almost, because even in a restaurant, consumers are expected to use cutlery to transport the food from plate to mouth.

This production aspect of consumption has long been recognized within economics (Michael and Becker 1973; Stigler and Becker 1977). From this Beckerian perspective, the individual is producing 'goods' about which they care, such as aesthetic enjoyment or intellectual satisfaction, for which they buy market inputs. So rather than thinking of goods bought in the supermarket as consumption items which require a bit of co-production, Becker suggests that *all* market goods are inputs into the household production function. We buy vegetables in the store to *produce* a dinner, which also requires time, social companions and capital goods like plates and cutlery. The merit of the Becker reformulation is that it allows us to see that the relationship between firm A and firm B, and firm B and the consumer is not fundamentally different. Co-production, viewed this way, is no different from how firms interact with each other. It is just another

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<sup>2</sup> This trade-off is occasionally noted in the co-production literature, see for instance (E. Ostrom 1996, 1080).

instance of specialization and the division of labor. It is of some interest that Kiser (1984) attempted to integrate this perspective into the theory of co-production.<sup>3</sup>

If co-production is a matter of specialization, then there must be a reason part of the production process is left to the consumer. It might be that firms simply seek to cut costs by relying on consumer inputs, but in a competitive market we should expect other firms to come and offer more 'finished' products or services.<sup>4</sup> A better explanation is that there is a degree of interdependence between the inputs provided by consumers and the goods or services provided by the (artistic) firm. Interdependence here refers to the fact that there is imperfect substitutability between the production of consumers and the producers, whereas independence would refer to a situation in which there is a high degree or perfect substitutability between the two (Parks et al. 1981, 1003). We now have two reasons for firms relying on co-production. First, in the case of independence, firms might believe that consumers have a comparative advantage (relatively low opportunity costs) and are thus interested in lower price, less 'finished' versions of the product. If there is heterogeneity of preferences *and* skills among the consumers, this means that in a competitive market there (likely) will be extensive product differentiation. Producers offer a variety of artistic goods which require various degrees of additional input from consumers.<sup>5</sup>

In the case of interdependence, firms rely on co-production because consumers can provide inputs, knowledge, or skills which are very costly for the firm to acquire. For practical purposes firms cannot therefore provide a 'finished' version of the product and are therefore dependent on consumer input for the successful delivery or appreciation of their product or service. In situations of interdependence where

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<sup>3</sup> His efforts were focused on the co-production of public goods and services, and Loser failed to deal with the interdependence of the inputs of producers and consumers, thereby severely limiting the usefulness of his formulation.

<sup>4</sup> In the public provision of services co-production is sometimes proposed as a simple measure of cost-saving for governments, but as Kiser (1984) observed early it is not clear why citizens would contribute to public goods if they can free-ride. If that is the case, relying on co-production is at best a case of cost-shifting of governments onto the citizens and more likely to lead to underprovision of the good or service in question.

<sup>5</sup> The skills involved in household production are developed over time, Becker and Stigler (1977) called the accumulation of such skills, consumption capital. As such skills develop firms will adapt and change the type of goods they offer.

co-productive efforts accrue to the individual co-producer there are still no real economic problems. This might simply refer to a situation where the consumer has knowledge which the producer needs to deliver a satisfactory product. In the arts a straightforward example is art produced on commission which typically involves repeated interaction during the production process between artist and client (Nelson and Zeckhauser 2008; De Marchi 2008).

For this reason, we believe that much of what has been labeled co-production or co-creation is little more than a relabeling of phenomena which are well understood with more traditional concepts and theories. This is not to say one cannot or should not engage in applied studies of this phenomenon. It might be interesting, for instance, to analyze how technologies impact the specialization between firm and consumer. Or from a management perspective one might be interested to analyze how knowledge can be effectively shared between the two parties to arrive at a satisfactory good or service. But theoretically both the firm and the consumer act out of self-interest, and there is not really an anomalous phenomenon which requires an additional explanation, or a new conceptual toolkit.

One might worry that there will be no distinct form of co-production left when our theoretical path is followed. But this is not at all the case. Co-production becomes an economic problem of interest and relevance when the individual contributing does not directly benefit from their own contribution. This type of co-production occurs frequently in the economy, and especially in the arts, and it *does* require an explanation. This problem might be overcome because art consumers are intrinsically motivated to contribute even if they do not directly benefit as suggested by Alford (2009, 26–29). But we think that sustained cooperation tends to rely on solutions which draw on individual self-interest. To ensure sustained forms of co-production we should see institutional solutions which reward co-production of those who are not residual claimants (Pestoff 2014). This is in line with the IAD-framework for institutional analysis as developed at the Ostrom Workshop (E. Ostrom 2010; McGinnis 2011), as well as the early theoretical explorations of co-production developed at the Ostrom Workshop (Parks et al. 1981; Kiser 1984). In this

approach it is assumed that behavioral motivations are broadly similar across different sectors and that institutional rules and frameworks are essential in steering individual self-interest toward solutions of collective action problems.

That being said Elinor Ostrom worked with a notion of rationality that was somewhat different from standard rational choice models (Ostrom 1998a). One crucial difference was that she allowed for the possibility that institutional solutions to collective action problems were developed within communities or markets, so that collective action problems were not necessarily tragedies, but could be turned into opportunities for collective action. We therefore do not assume that co-production with interdependence and significant externalities will necessarily fail to materialize. Instead, we believe that market actors and communities will frequently find institutional solutions to secure co-production in such cases. Such solutions should ensure that actors benefit from their co-productive capacities and discourage free riding on the co-productive efforts of others.

The institutions which facilitate co-production are therefore complementary to the organizational form of the firm. The firm can make, buy, *or* rely on co-production, an extension of the institutional structure of production (Rossi 2015). The first would entail that the process happens within one organization, the second that tasks are divided between two or more organizations (or the firm and the household), and the third that alternative institutional forms are established which produce certain elements of a product or service. Co-production is therefore a question of the (efficient) boundaries of the firm, as well as an institutional question of economic organization. It has sometimes been suggested, including by Ostrom, that co-production is the result of some kind of synergy (E. Ostrom 1996). But it bears remembering that synergy would be a reason for integration of this activity into the firm. Instead, our theory of co-production suggests co-productive efforts do not come about through some special synergy, but only when it is in the interest of the parties involved within a particular institutional context.

## 2. Types of co-production in the arts

Co-production is prevalent in the arts. But the phenomenon is by no means unique to the arts, especially the co-production of public services including public safety, health-care and education have long been studied (Davis and Ostrom 1991; McNullin and Needham 2018; Loeffler and Bovaird 2020). Even though co-production has been analyzed in different industries, a basic observation is that the degree of co-production differs between industries. A key question in examining co-production is, hence, why do we see more co-production in some industries than in others? Our theory suggests that we should expect more co-production at the interface between artists and consumers when there is a higher degree of interdependence between their respective types of production, and more alternative institutional solutions for co-production where jointness of consumption is more prevalent.<sup>6</sup>

As outlined above, co-production is a distinct phenomenon if the benefits do not accrue directly to the co-producer. This is the case when there is jointness of consumption, in other words when artistic goods are experienced in the company of others. The most common cases of this are to be found in the performing arts, but economists of the arts have suggested that art consumption generally tends to have important social dimensions (Potts et al. 2008; Klamer 2016). In the performing arts it is clear that there is a significant degree of interdependence between the productive efforts of artist(s) and consumer. The performers can attempt to create an atmosphere, but they require an audience willing to co-produce that vibe. It is important to note that even here, matters are relative, through for instance light shows and dancers a pop artist makes significant *costly* contributions to the creation of this atmosphere, without fully solving the problem of interdependence. In the performing arts the consumers co-produce at the time of the experience, and it typically takes the form of interaction between the artist and their audience. As we will

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<sup>6</sup> The notion of interdependence can also be used to analyze why different artists would be likely to co-produce in creative circles or communities. This type of co-production has been theorized by Jason Potts in his theory of the innovation commons (Potts 2018; 2019; Dekker 2020). In the literature on co-production in the arts there have been various studies of co-production between artists or intellectuals (Foord 2009; Dekker 2014; Richardson 2016; Leyshon et al. 2016; Abhari, Davidson, and Xiao 2016).

argue below the artist will tend to stage the performance so that the desired quality (type) of co-production occurs, whether that is collective silence, applause, laughter, chants, or something else.

A different type of co-production occurs after the product has been experienced by the consumer. In this case the co-producing consumer enriches or extends the original product. This can happen through, for instance, fanfiction, memes, reimaginings and other forms of creative engagement. This type of co-production, often done by fans, itself requires an audience to make economic sense to produce. Therefore, the main economic problem to be solved for this type of co-production to become sustainable is that of community formation, including the establishment of a forum or medium on which the co-productions can be shared. In the digital age such forums are often online spaces, but before the advent of the internet there were already thriving fan magazines (fanzines) as well as extensive fan clubs which enabled the sharing of material. Given the fact that there is not necessarily a direct connection between artists and fan communities, it is much harder for artists to control the quality (type) of co-production. This might have undesirable (reputational) consequences for the firm, which as we will demonstrate, not only illustrate co-production as a problem of the boundary of the firm but has also led to efforts by producers to steer, limit, or prevent co-production.

Table 1 depicts the two main types of co-production and the economic problem associated with them.

*Table 1 - The two types of co-production at the interface between producers and consumers, their cause and potential solution.*

Co-production	Economic problem	Institutional solution	Existing literature
Around consumption	Free-riding of consumer-producers on the co-productive efforts of others resulting from the jointness of consumption	Incentives through staging of performances, reward schemes, repeat interactions, crowdsourcing.	Czarnota (2018) Choi and Burnes (2013) Chaney (2019) Gamble (2018) Vandenberg et al (2021) Tutenges 2021

After consumption	Community formation, sharing of co-productions.	From the side of consumers: Fan communities, user innovation circles. From the side of artistic producers: Steering co-production, preventing reputational damage.	Booth (2017) Jenkins (2018) Rhee et al (2021) Proctor (2013) Idema (2020) Geraghty (2015)
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### 3. Artistic co-production around the experience

The most studied type of co-production is that at the interface between consumers and producers, where it also known as co-creation of value (Voorberg, Bekkers, and Tummers 2015; Brandsen and Honingh 2018). The performing arts are the most obvious example of jointness of consumption in the arts. Although there are small scale performances, such as living room concerts, typically consumption of concerts, plays, and operas happens in crowds of considerable size. To the extent that individuals co-produce these performances, there is thus a risk of free riding for consumers. Consumers might fail to contribute to the atmosphere, by not joining the crowd-response, not singing along, not dancing, or at classical concerts not helping to maintain the customary silence. In those cases, we can speak of an under-provision of the desired atmosphere. In commercial settings there are good reasons to seek to prevent such bad experiences. The reputation of a performer or band might be hurt by the lack of crowd participation or engagement during a concert, they will therefore have incentives to prevent this from happening. Here it becomes clear how this is a problem at the boundary of the firm. The artists can decide to produce more of the ‘service,’ i.e., light shows, costume-changes, stage props, or additional performers on stage such as dancers or ‘hype men.’

The problem of the under-provision of atmosphere does not necessarily have to come about. First one might perceive crowd participation more as a coordination problem, than as an incentive problem (e.g. Alford 2009, 27). In that case we should assume that crowd participation is not itself costly to consumers, but that individuals do not want to deviate in their behavior from others. In that case, creating the atmosphere might be sparked by the artist, after which it is self-sustaining. This might be a useful simplification for some limited set of cases, but it seems clear that in most instances there is variation in the

intensity of co-production both at the collective and the individual level. Sociologists have suggested that audiences experience collective effervescence during live performances (Vandenberg, Berghman, and Schaap 2021; Tutenges 2021). Although this might be a good explanation why people are attracted to the performing arts, it does not explain the dynamics of crowd-participation. The idea of collective effervescence fails to explain how crowd participation starts, or why it is individually rational to join in, when others are not (yet) doing so.

Another reason why under-provision might not occur is because the private benefits from co-production exceed the private costs for a significant share of the crowd. Individual preferences are heterogenous, and some will be willing to co-produce even in the absence of the contributions of others. Artists seeking co-production could use this to their advantage. They might for instance engage in attempts to sort the fans who attend their performances. If there is, for example, a way to ensure that the most enthusiastic fans can attend and occupy prominent places in the crowd, artists have an incentive to do this. This might result in lower ticket prices, which ensure that younger fans (with less income but more enthusiasm and willingness to stand in line) can attend. This reduces gross income but increases the quality of the experience for the entire crowd.

In the absence of sufficient spontaneous co-production, the performing artists will still seek to ensure that co-production happens. We do not think that a general institutional solution can be observed across the performing arts, but we can point out several common mechanisms which facilitate it.

One such mechanism is the encore, the performance of some additional material. The encore is a reward for the enthusiasm of the crowd, and its main (potential) benefit from the perspective of the artist is that it is a conditional reward. If the crowd co-produces it earns this reward, if it does not it will miss it. Obviously, this only works if the reward is genuinely conditional, and does not become a standard part of the show. Ostrom spoke in this regard of the importance that participants could develop credible commitments

toward each other: “so, that if one side increases input, the other will continue at the same or higher levels” (E. Ostrom 1996, 1082). The encore is such a commitment.

Another common phenomenon in the performing arts, at the other end of the show, is the opening act. This is clearly not a conditional reward, but the opening act might help to build an atmosphere of co-production. This is more likely in the interest of the opening act if they are paid by the firm producing the main performance (or if they are part of the same organization). In that case the main act has some control over the performance of the opening act, for instance, to tell them to incorporate elements specifically aimed at warming up the crowd (such as cover songs or call-and-response routines). If this is not the case, the interests of the opening act might lie elsewhere, for instance in establishing their own reputation or familiarizing the crowd with their (less known) repertoire. This illustrates again that ensuring co-production is a question of the boundary of the firm. In certain instances, an act performing first might even wear out the crowd and make co-production for the following act harder, a clear case of rivalry.

Expanding the firm could happen in other directions. One could for instance hire certain consumers on the condition they co-produce. Although we are not aware of examples in the performing arts, the controversial practice of payment for followers on social media accounts appears to be widespread. There are also many anecdotal stories about political leaders paying citizens to show up and co-produce at political rallies. Much less controversial is the idea that there would be payment of co-producers who help develop a product, freelance testers in the game industry are frequently paid and enjoy benefits such as early access to the product (Straub et al. 2015; Czarnota 2018). But using the term co-production for such payments seems unnecessary, here we just see the boundary between firm and household production shift.

One might expect that it is easier to generate patterns of co-production when there is a mutual expectation that a particular performance is part of a broader pattern of interaction between artist and consumers. This

is one reason why building a bond with their crowds, for instance through the fostering of fan communities or subscription models might be an indirect way of encouraging co-production. This broadens the idea of the encore and provides conditional rewards to repeat consumers. Again, the idea of filtering is of economic relevance here, to reward a specific group of consumers. One limitation of such patterns of interaction is that performing artists typically tour and thus do not play in front of the same crowd frequently. There are exceptions to this pattern such as theater companies or symphony orchestras based in a particular city or even venue, and here we indeed often find subscription models. In the related area of sports, this helps explain why home crowds are frequently very willing to contribute to the atmosphere. In the arts we should also consider folk festivals, such as carnivals, which depend strongly on co-production among relatively closed communities which guarantees repeated interactions.

Given the benefits of repeated patterns of interaction, we might also expect certain firms to specialize in this aspect. A comedy club or venue for popular music has a clear interest in successful experiences for both performers as well as consumers. Since such venues are in a particular place it is likely that they have (some) customers who visit repeatedly, and they might therefore also seek to stimulate co-production. One way of doing so is by providing additional services, such as drinks, which might stimulate the crowd to co-produce. For example, some comedy clubs maintain a two-drink minimum. But there are also spatial components to what they offer. Venues can for instance offer both standing room and seating to cater to heterogenous tastes among their consumers. This offers the possibility of different experiences for those who differently value the interactive aspects of the performance, such as in the extreme case of mosh-pits in front of the stage and seats on the balcony.<sup>7</sup>

Finally, there are instances in which consumers create direct negative externalities for other consumers.

The use of technology like smartphones is a commonly cited example which either distracts in theaters or

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<sup>7</sup> To the extent that heterogenous experiences are possible there is less jointness of consumption. One might therefore argue that attempting to facilitate heterogenous experiences is an alternative solution to the under-provision of co-production.

blocks the views of others during concerts. Disturbing the silence commonly observed during classical music concerts and operas would be another example (Müller 2014). Artists have sometimes responded by banning or even confiscating smartphones, although this is sometimes just as much driven by worries about digital reproduction. Artists do sometimes refuse to start their performance, or interrupt it, when silence is not observed. But co-production to avoid negative externalities, rather than to create positive externalities, might be easier. Norms might develop among the audience and are likely to be enforced by consumers who feel affected by violation of the norms.<sup>8</sup>

Based on our analysis of the performing arts we will now look at several existing empirical studies, to see what they demonstrate about institutional solutions to the (potential) collective action problems involved in co-production. Thyne and Hede (2016) investigated what they call co-production in two museums in New Zealand, looking especially at how the museums management incentivize visitors to co-produce their experiences. The researchers emphasize the crucial role of curators and guides facilitating the co-production processes, and their findings suggest that such efforts improved the user experience. The museums incurred costs in terms of extra staff and other tools such as audio tours to provide more of an experience, and to deliver a more complete experience. In this situation co-production seems of little relevance, the museums have simply decided that they are better off delivering a more ‘finished’ service. In this instance we see a change in the boundary between firm and consumer production, but nothing more. Kershaw et al. (2020) analyze co-production in Australian museums. They claim that museums carry out co-production instrumentally, to fulfill the requests of policymakers and ultimately to obtain more public funds. But even if co-production is not always the real motive, there are important exceptions.

A related study looked at how various cultural heritage institutions in Australia have responded to a new type of consumer, who requires that the museums “move beyond the mere exchange of a pre-designed

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<sup>8</sup> This advantage notwithstanding, we are aware that at the Concertgebouw in Amsterdam staff offered cough drops during the performance, and occasionally even asked coughers to leave the concert. An example of the venue incurring costs to ensure co-production of silence.

experience with consumers” (Minkiewicz, Bridson, and Evans 2016, 755). To address this demand, heritage institutions have invited, engaged, and supported consumers to co-produce the museum experience, through practices of co-curation, children-friendly signage, and assisting visitors through customization of the experience thanks to guides and volunteers. This case study is of more interest because it highlights a tension between the production of a more ‘finished’ product and the encouragement of co-production. As we have seen above both typically involve additional costs for the artistic organization, and they are therefore empirically hard to distinguish. When a museum gives some visitors a degree of control over curation there is a clear element of jointness of consumption because the additional efforts of some visitors have important spill-over effects on the experience of others. It is, however, not directly clear why, even given heterogenous motivations, some visitors would be motivated to deliver these extensive additional inputs (absent additional incentives). Nor is it clear why the curation of this small group of visitors would reflect the preferences of all visitors better than museum curation.

In popular music there are digital platforms which allow artists to build virtual communities through a rewarding scheme. These platforms are an innovative way to not only develop the repeated interactions we highlight above but also to share ideas for fans and for artists to provide conditional rewards. Choi and Burnes (2013) have noted that this alternative business model which incorporates co-production additionally diminished the negative impact of piracy. Piracy, for instance the sharing of (low-quality) recordings of live performances as studied by Gamble (2018), is itself a form of co-production. Although it increases the reach of the artist, the artist might wish to limit such co-production, because they cannot control the quality of the recordings.

Potentially divergent interests between producers and consumers are also recognized in the literature on crowdfunding, the practice of involving potential consumers in the early stage of an entrepreneurial project (profit or nonprofit), whereby firms ask digital communities to ‘back’ their ideas through financial support (Dalla Chiesa 2020). Chaney (2019) argued that crowdfunding in the arts can reverse the principal-agent

relationship between consumer and artists. In his reconceptualization backers become the principal of the relationship because they have clear ideas and expectations about the content of the projects they wish to support. He concluded that crowdfunding is not about the emancipation of artists from traditional gatekeeping structures, but about co-production. In this case the consumers in their role as crowdfunder seek a certain level and type of co-production of the artist. This is a fascinating perspective which reinforces our idea that co-production should be studied in the context of firm boundaries and industrial organization.

The principal agent problem is a useful lens to understand the difficulties involved in co-production. The control and monitoring problems familiar within the firm are equally present at the interface between producers and consumers. But since consumers are not (commonly) a part of the firm, artists cannot directly steer or control their efforts. This also demonstrates the limits of the principal-agent lens because the institutional solutions for co-production *in the presence of jointness of consumption* will look differently as we explored in this section. Although artists have at least some influence over the co-productive efforts of consumers during live performances, that influence is much smaller for what happens after the moment of consumption as we will explore in the next section.

#### 4. Co-Production in fan communities

In the model of household production, it is suggested that individuals purchase market goods to realize their own goals. In most instances, these goals are predictable and close to that of the producer. But like other producers, consumers as co-producers can also make new combinations and engage in entrepreneurship, sometimes called user-innovation (Hippel 2005). They might take co-production in directions not foreseen by the artist. The previous section dealt with instances where co-production of the desired type did or did not occur, this section deals with instances where co-production of an undesired or unexpected type occurs. This dynamic is of particular relevance to understanding the co-production within fan communities, such as fan-fiction (Jenkins 2006; 2018). The dispersed nature of fan communities means that there is no comprehensive data on the extent of fan production, but both in pop music as well as in

science-fiction and fantasy fan production is incredibly extensive, and sometimes overwhelms the official production of series like Star Trek or Harry Potter.

Co-production in fan communities is outside the domain of control of the firm. It is undertaken in institutional settings developed by the fans, although occasionally artists have facilitated or supported the formation of such communities. In the basic economic logic outlined above it is clear that one consequence of the extensive production by fans is that it substitutes firm production for consumer production. This suggests that interdependence between firm production and consumer production is limited. At least after the 'official' material has been developed, consumers face no serious obstacles to produce more of the product. From the perspective of the firm, it is a question whether this kind of substitution is desirable. Firms are established because entrepreneurs think they can add value and believe there are profits to be earned. If fan production focuses on the activities which add value and generate profits, then clearly firms would not necessarily welcome this kind of co-production. Artistic organizations have therefore frequently used the tool of copyright which might be used to prevent certain types of fan production (Liebler 2015; Schwabach 2016).

But the dynamics between production in artistic firms and co-production in fan communities is more complex. Some of the most extensive fan production exists around franchises such as Star Trek, include fanfiction, re-enactments, and comic conventions, where board games, tv shows, books, and literature are reinvented and expanded. In some cases, fan communities have managed to change the course of their favorite shows, such as Star Trek both in direction and in length. Fans for instance lobbied for a new season after the show was initially canceled (Geraghty 2015). The initial fan productions around Star Trek were for instance driven by the fact that the original series had not fully lived up to its promise to challenge the 'white history narrative' (ibid, 73). In this sense co-production in fan communities is qualitative feedback about the type of product which is desired by (certain) consumers. Thus, fan production can function as a quantitative and even qualitative signal that demand is still present, and that the firm should produce new

material, aside from obviously generating free promotion for the material of the firm. The recent acquisition by Disney of the Star Wars franchise appears obviously motivated by the continued popularity of the franchise among fans and the extensive fan production currently in existence. Disney is now regularly producing new spin-off series, video games, costumes, and board games (Proctor 2013).<sup>9</sup> In doing so it could rely on the knowledge generated through fan production which provided vital signals about which kind of content would likely be valued.

Yet, firms might not always want to tap into this unmet demand. In manga fan fiction there is for instance space for homo-erotic narratives, sometimes involving underage characters (Zanghellini 2009).

Commercial firms typically seek to avoid storylines which strongly challenge existing moral beliefs, because they fear that it might harm their brand. In such instances fan production is better understood as a form of product differentiation which is not (yet) commercially viable. Fan production in more contested directions sometimes reflects underserved niche markets. This might not lead to internalization of this kind of production in an existing artistic organization, but it might stimulate new artistic firms to enter these niche markets. Again, this kind of feedback dynamic is a good reason to value fan production. But the artistic firm who originally produced the material might still fear reputational harm from the controversial fan productions and seek to prevent it through copyright and other kinds of legal instruments.

The notion of unmet demand and heterogenous preferences among the audience also provides a good starting point for understanding why fan production happens. Fan production is clearly not individually rational in a simple sense, it is (very) costly to produce. The benefits of this type of co-production clearly accrue mainly to others, the consumers of this material. But quite universally fan communities have managed to overcome this collective action problem, and many sustain themselves across the creative industries. Institutionally, this is done through online communities and sharing platforms which offer

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<sup>9</sup> Disney has a history of controversy for the way it has cracked down upon reuses of its characters in fan production (Wasko 2020, chap. 8).

staggered rewards for regular or excellent contributors (often by awarding contributors with social status). In the case of Star Wars, fan fiction is exchanged on *Storium*, a bottom-up platform facilitated by a Kickstarter campaign, on which fans can share their fictional writings, using existing characters to explore uncharted lines of the grand narrative (Booth 2017). These communities tend to operate according to the logic of the (cultural) commons (Hess 2012; Dekker and Kuchař 2021). As one would expect in a knowledge or cultural commons, contributions are central to sustaining the practice, and fans move up in their social standing in the community if they are able to contribute more. The ethos in fandom communities is frequently anti-commercial, oriented toward sharing and gift-giving, sometimes considered as giving back to the world to which the fan is committed (Scott 2009; Jarrett 2021). Rules typically also govern which type of extensions and modifications are considered acceptable, and which basic rules of the relevant 'universe' should be respected. In this way a community of reciprocity is created. Although there is much sociological work on fan communities, the exact institutional details have not been studied through an economic lens.<sup>10</sup>

But aside from the institutional organization of fan production and its sharing or exchange, the broader question is why such fan production flourishes when the artistic firm already produces the good or service. The answer lies in the fact that fan communities produce material that is not necessarily commercially viable because it caters to smaller groups. As such fan communities are a response to unmet demands and should be understood as a valuable alternative institutional form, which produces value for those involved. The reason such production continues to exist might derive from a degree of intrinsic motivation of the fan producers, as well as by the fact that fan producers might see it as an investment into a particular set of skills and career. But as Ostrom noted in her work on co-production, consumer production is more efficient when the opportunity costs of time are lower for the fan producers than for the firm (E. Ostrom 1996, 1080). The relatively low opportunity cost for (young) fans is the most straightforward explanation why

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<sup>10</sup> The analysis of the institutional organization of Wikipedia by Safner (2016) provides a framework for how this could be done.

certain products are consumed in fan communities, even though the market firms do not consider it profitable to produce them.

In existing empirical studies of fan communities these economic dimensions are typically only in the background of the analysis, but they can be discerned. Idema (2020) has studied what happened during the Covid-19 pandemic, in the visual arts. He documented the social-media challenge to create a photo of one's favorite painting. Audiences, locked up in their homes, dressed up and changed their living room into the décor of an iconic image (Idema 2020; Dekker and Morea 2023, 78–79). But he recognized that not all co-production of this kind is invited or appreciated by museums. Some museum visitors took pictures while touching the artworks, or created social media protests of certain pieces of art which they regarded as misogynistic or racist. Museums have not stood by helplessly. Once the demand for artistic photography publishable on social media became apparent, both existing and new museums adapted to the trend and provided spaces uniquely dedicated to social media content creation (Rhee, Pianzola, and Choi 2021; Bollati et al. 2024).

We have demonstrated in this section that the dynamic between consumer production and firm production is not uniform. Fan communities might alert firms to unmet demands, or provide free marketing, but since they operate outside the control of the firm, they can also threaten the firm's business model or harm the firm's reputation. This underlines two broader points suggested by our theoretical framework. First, co-production is not a matter of synergy or cooperation between firm and consumers, instead it is driven by the interests of the various parties involved, interests which frequently diverge. Second, co-production is crucially an issue at the boundary of the firm and other institutional forms such as cultural commons.

## 5. Conclusion

In this paper we have argued that co-production has been used indiscriminately in the discourse on the arts, and beyond. We have distinguished between a type of co-production that is directly in the interest of

the co-producer because the benefits accrue to them, and types of co-production in which the benefits of co-production are more dispersed and accrue mainly to others. We have argued that only this second type of co-production is an economic phenomenon in need of explanation, for in the absence of institutional structures outside the firm we should expect this type of co-production to be underprovided or absent. Our theoretical contribution has been to integrate co-production into the theory of firm and household production, and to have used the notions “jointness of consumption” and “interdependence of inputs” to distinguish and explain different sub-types of co-production.

The interesting type of co-production, which is not in the direct self-interest of consumers, happens at the boundary of the artistic firm and is made viable through institutional innovations. We have explored various institutional solutions at the interface between producers and consumers and have demonstrated that they can range from changes to the product, which act as credible commitments to encourage co-production, to alternative forms of economic organization such as fan communities. Institutional solutions to foster co-production must be structured to facilitate reciprocal co-production, otherwise one of the parties will simply lower its efforts in response to increased efforts from the other side. It must also ensure that potential co-producers cannot simply free ride on the efforts of others. Our theory explains in which cases such institutional solutions are required and suggests under which potential institutional rules the under provision of co-production might be overcome.

We have suggested that jointness of consumption, one of the main reasons for co-production, is prevalent in the arts, especially the performing arts. But as noted, the social dimension of art consumption has been highlighted by economists and sociologists of the arts, which suggests that the dynamics we analyzed for the performing arts might have much broader relevance in the arts. From the joint experience of other art forms to the conversations about artistic goods and the status dimensions of the arts, there are essential elements of collective co-production to be found. While we have put less emphasis on the interdependence of inputs as unique to the arts, we believe that interdependence is more frequently present for what have

been called experience goods, where producers can at best stage the experience (Pine and Gilmore 1999), whereby most art forms should be considered experience goods (Hutter 2011).

One of the key puzzles in empirical studies of co-production, in particular of the co-production of public goods and services, is why citizens are unwilling to contribute. Our theory demonstrates that in situations in which the benefits of co-production accrue to the co-producer, co-production will happen, and is little interesting from the standpoint of economic theory. But conversely, when the benefits of co-production accrue mostly to others, citizens will attempt to free ride on the efforts of other co-producers. To overcome this (potentially) problematic type of co-production additional institutional solutions must be developed by the provider of the public good to incentivize and ensure co-production. Rather than identifying causal success factors independent from a theory of co-production as much of the literature has done, we suggest that further empirical work analyzes the emergence and functioning of such alternative institutional solutions. Their presence is the most important determinant for the success or failure of efforts aimed at the co-production of public goods.

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