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# CAN CULTURAL CONSUMPTION INCREASE FUTURE EARNINGS? EXPLORING THE ECONOMIC RETURNS TO CULTURAL CAPITAL<sup>\* †</sup>

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Abstract:

Cultural consumption is often viewed as a form of embodied cultural capital which can be converted into economic rewards because such practices increase the likelihood of moving into more advantaged social positions. However, quantitative evidence supporting this proposition remains uncertain because it is often unable to rule out alternative explanations. Cultural consumption appears to influence hiring decisions in some elite firms, in both the U.S. and the U.K., but it is unclear whether these processes are applicable to other professional occupations and other labour market processes such as promotions. We examine these processes using data from Understanding Society, an individual-level panel survey conducted in the UK, allowing us to explore whether cultural consumption predicts future earnings, upward social mobility, and promotions. People who consume a larger number of cultural activities are more likely to earn higher wages in the future, to be upwardly socially mobile, and to be promoted. Cultural consumption, then, can function as cultural capital in some labour market settings, potentially contributing to the reproduction of income inequality between generations.

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<sup>\*</sup>Replication materials are available here: <https://github.com/asreeves/culture-income>

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## INTRODUCTION

Cultural consumption is correlated with social position (Bennett et al. 2009; Chan 2010). Across high-income countries, people who are highly educated, have higher incomes, and work in prestigious occupations are, on average, more avid cultural consumers than people in less advantaged social positions (Chan 2013; Jaeger and Katz-Gerro 2010; Peterson and Kern 1996).

One common explanation for this homology between cultural consumption and social position presumes there are economic returns to participating in cultural activities (Bills 2003). Or, to be more concrete, consuming certain cultural products may increase the likelihood of moving into advantaged social positions and thereby increasing future earnings (Bourdieu 1984; Rivera 2011). Economic returns to cultural consumption may arise because these practices smooth access to advantaged social positions in situations where gatekeepers prefer people who are already similar to themselves (Tilly and Tilly 1998), allowing evaluators to recognise a candidate as ‘one of us’. Likewise, gatekeepers may treat cultural consumption as a signal of other desirable traits that are valuable to firms, such as intellectual curiosity or creativity (Ridgeway and Fiske 2012). In these circumstances, as Bourdieu (1984) argued, cultural consumption becomes *a particular manifestation* of ‘embodied cultural capital’.<sup>1</sup> Cultural dispositions along with the symbolic mastery of certain cultural forms generate patterns of cultural consumption and these practices, in turn, enable some (rather than others) to secure certain social and financial rewards (Bourdieu 1986). It is precisely the ‘convertibility’<sup>2</sup> of cultural consumption into other (economic) resources that potentially makes, for example, attending the theatre, and the underlying dispositions which give rise to this practice, a form of cultural capital.

Despite broad support for the idea that cultural consumption qua embodied cultural capital contributes to class reproduction and facilitates the accumulation of economic capital, much of the existing quantitative evidence linking economic resources and cultural consumption remains fragile (Bills 2003). Quite simply, this proposition has not yet been ‘demonstrated empirically’ (Rivera 2012). Very few studies have quantitatively examined the association between cultural consumption and economic resources; those that have cannot necessarily rule out alternative explanations because they use cross-sectional data (Böröcz and Southworth 1996) or because they treat economic resources as a predictor rather than an outcome (Alderson, Junisbai and Heacock 2007; Bennett et al. 2009; Bukodi 2007; Chan 2010). In contrast, a great deal of research has documented the economic returns to institutionalized forms of cultural capital, such as educational credentials (Hout 2012); however, these studies often rely on longitudinal data that follow the same individuals over time, something that remains rare in studies of culture and social stratification (Reeves 2014). Without longitudinal data, it will be difficult

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<sup>1</sup>There is, of course, some debate about how this term has been used. Here, we follow Bourdieu in ‘The Forms of Capital’ where he argues that ‘the possession of the means of ‘consuming’ a ‘painting’ is ‘nothing other than embodied [cultural] capital’. This definition is also extremely common in the secondary literature and so, while we recognise that how people consume such cultural objects is central to this concept, in this paper, we operationalise cultural consumption as one manifestation of embodied cultural capital. It is, in other words, the dispositions or symbolic mastery that facilitate lifestyle or cultural consumption.

<sup>2</sup>The convertibility metaphor is imperfect. A person does not have any less cultural capital after it has been converted into other forms of capital, although there may be diminishing returns to a particular form of cultural capital in specific settings.

to document whether (consciously or unconsciously) cultural consumption is convertible into financial rewards through labour market mechanisms.

Beyond the basic uncertainty regarding whether cultural consumption leads to financial rewards, there are also deficiencies in our understanding of when and for which groups cultural consumption may become a form of cultural capital. Indeed cultural consumption does not translate into economic resources in all situations and for all groups (Bourdieu 1986). Relatively few occupations are looking for people interested in ‘18th-century literature and avant-garde film’ (Rivera 2012) but this does not mean cultural consumption plays no role in hiring decisions. Elite professional service firms and the creative industries both use cultural interests to inform selection processes (Ashley et al. 2015; Koppman 2016) and yet whether the insights generated in these specific labour markets can be generalised to other occupations and to related labour market processes, such as promotions, continues to be an open question. Addressing these gaps requires nationally representative data that allows us to unpack whether the economic returns to cultural consumption become visible through certain labour market processes, such as hiring and promotions, and whether these returns are greater in occupational settings where the barriers to entry are higher, such as the professions.

Understanding these processes has important implications not just for cultural sociology but also for the study of inequality. If cultural consumption is not associated with future earnings then the convertibility of cultural consumption into financial rewards would appear to be rather limited, suggesting such practices are not a particularly strong form of cultural capital. However, if the cultural capital argument is correct – i.e., if cultural consumption predicts future income – then cultural dispositions may be one of the mechanisms through which inequality is reproduced, thereby further explaining the link between family background and future earnings (Blanden, Gregg and Macmillan 2007; Lamont, Beljean and Clair 2014).

In this paper we take advantage of nationally-representative, longitudinal data from the UK to explore whether cultural consumption predicts future earnings in ways consistent with cultural capital theory. We find that people who consume more cultural activities earn more in the future; they are also more likely to experience upward social mobility and to receive a promotion. We also find that the association between cultural consumption and future earnings is strongest among those with higher educational attainment and who are working in professional occupations, indicating that particular patterns of cultural consumption matter more in some occupations than others. Cultural consumption is one important manifestation of embodied cultural capital that contributes to the distribution of economic resources within society and may contribute to the persistence of privilege.

## SOCIAL ORIGINS, CULTURAL CONVERGENCE, AND CULTURAL CAPITAL

Family background and educational attainment are both strong predictors of cultural consumption and future earnings (Bourdieu 1984; Hout 2012). But these factors do not entirely explain the link between culture and income, nor the processes through which family background leads to higher earnings. For example, after controlling for education and social origins, income is positively associated with cultural consumption in the UK (Chan 2010), among

other high-income countries (Alderson, Junisbai and Heacock 2007; Jaeger and Katz-Gerro 2010).

In this paper, we are concerned with the portion of the culture-income association not explained by education or family background (and its effects outside the cultural realm, such as access to professional networks). Excluding these factors leaves us with a process of convergence and/or a process associated with cultural capital. Cultural convergence theories suggest income may predict future cultural practice. Individuals who move into advantaged social positions adapt their cultural interests and practices to increase the degree of homogeneity between themselves and their new peers. In contrast, cultural capital theories suggest cultural consumption may increase the likelihood of moving into advantaged social positions.

Networks are often assumed to cause culture (Pachucki and Breiger 2010; Edelman and Vaisey 2014) and so cultural tastes are presumed to be the product of social ties and social location. In this view, when people enter new groups they begin to adopt some of the pre-existing patterns of cultural consumption among long-standing members, that is, they experience cultural convergence (Daenekindt and Roose 2014; Friedman 2012). For example, civil servants and politicians attend the opera regularly but they are not necessarily motivated by enjoyment. Rather, they see attendance as a 'key form of sociability' where 'a lot of senior civil servants meet each other' (Bennett, et al. 2009). Even subtle signals of positive preference from those with whom we possess weak ties can influence our own reception of songs we have never heard before (Salganik, Dodds and Watts 2006).

However, culture also shapes networks. Social ties are often formed as a result of cultural matching, when two individuals discover they possess the same or similar tastes or preferences (Vaisey and Lizardo 2010). Students, for example, are more likely to become friends with people who share similar likes and dislikes (Edelman and Vaisey 2014) and the same is also true on social networking sites, such as Facebook (Lewis, Gonzalez and Kaufman 2012). Possessing or mastering certain cultural tastes can therefore become a form of cultural capital because those who possess it may be more able to foster and then sustain relationships (Lizardo 2006). Cultural taste, then, may be especially important if their role in creating and then maintaining relationships also has economic consequences (Granovetter 1973).

This is the association we are principally concerned with in this paper: that is, whether cultural consumption – as a form of cultural capital – predicts future earnings. If cultural consumption does not predict future earnings then this would offer strong evidence against cultural capital mechanisms in this setting. Contrastingly, if cultural consumption does predict future earnings – independent of other factors – then this would suggest that the possession of cultural capital does facilitate economic returns. This would not rule out convergence as a potential mechanism linking cultural consumption and economic position – however it would strongly suggest that convergence alone does not explain the link.

## HOW CULTURAL CONSUMPTION AFFECTS HIRING AND PROMOTIONS

Earnings and occupational status are products of decisions made around hiring and promotions; and so, if cultural consumption is convertible into higher future earnings then it should be most visible in processes associated with hiring and promotion (Koppman 2016). The capitalization of cultural consumption may both coalesce around, and be revealed by, these labour market processes.

Evaluators on hiring committees serve as gatekeepers to occupational status and higher wages, and so the interview is a critical site in which social strata are formed and reproduced. Hiring decisions can involve (i) a selection process and (ii) a matching process (Tilly and Tilly 1998); and, consistent with cultural capital theory, both processes may advantage those who consume a larger number of cultural activities (Bills 2003).

Selecting on cultural consumption may be a heuristic device used by evaluators during hiring process. If cultural consumption signifies high-status origins then evaluators, recognising such cues, may regard the candidate as 'one of us', enabling them to enact social closure on criteria less transparently associated with class origins (Lamont, Beljean and Clair 2014). Broad cultural consumption could also be important to firms because it represents desirable dispositions or traits (Erickson 1996). Cultural variety may be viewed as an indicator of intelligence (Koppman 2016) or interpreted as the capacity to coordinate with others. This may be especially important in middle-management, where working with people throughout the organizational hierarchy is essential (Thiel 2007). Within the creative industries, broad cultural interests are viewed as a sign of creativity, intellectual curiosity, and innovation (Koppman 2016); and, because these skills and traits are desirable in many occupations, firms may use cultural consumption to select imaginative candidates. Participating in a wide range of cultural activities may therefore be symptomatic of other desirable character traits.

Firms also select individuals using processes of cultural matching (Koppman 2016; Rivera 2012). In Rivera's studies of elite professional service firms, evaluators selected on 'superior cognitive and non-cognitive abilities' but they also cared about participation in 'high status and/or time-consuming leisure activities' (Rivera 2012: 1004), which were also enjoyed by the hiring committee (Rivera 2011). Cultural similarities facilitate bonding and build trust (Erickson 1996; Koppman 2016), and thereby communicate to evaluators whether potential candidates will be a good 'fit' with the firm (Rivera 2011). 'Fit' describes the perceived similarity of the candidate to the firm's 'existing employee base in leisure pursuits, background, and self-presentation' and is used to select candidates in the U.S. (Rivera 2012: 1007) and the UK (Ashley et al. 2015). Applicants from less advantaged social backgrounds struggle to demonstrate 'fit' because they have often not acquired the right dispositions or tastes which will establish a connection with evaluators (Ridgeway and Fiske 2012). Contrastingly, candidates with varied cultural consumption may have a greater chance of quickly establishing common ground with gatekeepers through shared interests leading to positive affect between evaluator and candidate, which, in turn, increases the likelihood of obtaining the job.

Beyond hiring, promotions are another mechanism generating higher earnings and occupa-

tional status, and where varied cultural consumption may continue to confer advantages on candidates. One reason firms select on 'fit' is that evaluators believe it will increase retention (Rivera 2012). Promotions then become both a reward for and a signal of 'fit'. In fact, cultural consumption may be more important for promotions because it is more accurately observed through sustained everyday interaction. Even in non-elite occupations, varied cultural consumption is an important characteristic of those who are managers or supervisors, enabling them to foster bonds of trust with a range of colleagues. This is more than just a matter of social ease, these traits are desirable because they allow coordination (Erickson 1996), a highly desirable trait in large, complex firms. Varied cultural practice, then, may also predict future earnings to the extent it increases the chances of receiving a promotion.

## CULTURAL CONSUMPTION, PROFESSIONAL OCCUPATIONS, AND BARRIERS TO ENTRY

The evidence connecting cultural consumption with economic rewards comes from quite specific labour markets, such as elite occupations or the creative industries (Ashley et al. 2015; Koppman 2016; Rivera 2012). However, the selection and matching processes that are used to explain the economic returns to extracurricular interests are not unique to elite or creative firms. We argue, therefore, that cultural consumption may become a form of cultural capital in professional occupations generally and not just in elite or creative firms. In fact, cultural consumption may be important to any industry relying on informal recruitment practices and networking (Granovetter 1973). Trust is a core motivation for hiring and promoting someone in situations of uncertainty (Kanter 1977), and evaluators often rely on social similarity or shared interests as a basis for trust because these commonalities generate positive emotions, e.g. 'liking', regarding the candidate (Nicholson, Compeau and Sethi 2001). This nexus (shared interests, liking, and trust) certainly matters in elite firms but it is also evident in a range of other professional or skilled occupations, suggesting these processes will matter in these labour markets too.

Cultural consumption may also become especially salient in any formal selection process when the variance between candidates on essential criteria is small. Certainly interviewees at elite professional service firms are all assumed to have some basic level of intellectual ability (Rivera 2012) and so evaluators begin to seek other criteria on which to differentiate candidates. In this context, interviews and promotions will most likely be the sites in which culture comes to the fore because this is the moment when – having selected those with appropriate credentials and experience – the differences between candidates will be smallest. Once again, these processes go beyond elite firms and inform hiring decisions in other professional occupations where the barriers to entry remain relatively high (Ashley et al. 2015). It is precisely the low degree of variance among candidates that prompts these professional occupations to pursue sustained interviews over a long period of time, which increases the likelihood that evaluators will use culture as a way of selecting appropriate candidates (Ashley et al. 2015). If cultural consumption becomes more salient in settings when the variance between candidates is low then the economic returns to cultural consumption will be greatest within occupations that maintain high barriers to entry by, for example, requiring a university degree, such as the professions.

Taken together, this literature suggests the conversion of cultural consumption into embodied cultural capital may be especially evident within certain labour market processes and within particular labour market positions. Consuming a wide range of cultural activities may inform the processes of hiring and promoting by helping candidates establish trust with evaluators and demonstrate desirable skills or characteristics. These processes will be especially salient in professional occupations and among those possessing a university degree.

## WHAT TYPES OF CULTURAL CONSUMPTION MATTER?

If cultural consumption plays a role in hiring and promotion decisions, what types of cultural consumption may be converted into economic rewards? It is unlikely that firms select directly on specific activities, such as golf, or on specific types of activity, such as highbrow consumption. Even within creative or elite firms, sectors where highbrow consumption may be most valuable, evaluators were less interested in 'avant-garde film' than whether candidates were a good 'fit' (Rivera 2012).

We argue, therefore, that the volume of cultural consumption (Bennett et al. 2009; Warde, Wright and Gayo-Cal 2008) may play a particularly important role in these processes because the number of cultural activities people consume captures underlying, durable, and relatively scarce dispositions that may comprise embodied cultural capital (Bourdieu 1986). Of course, measuring the volume of consumption does not register how people consume cultural products, a key component of embodied cultural capital that is difficult to capture in quantitative data (Friedman 2011). But, qualitative evidence, too, has stressed the importance of varied cultural interests in both the selection and matching mechanisms that convert cultural consumption into cultural capital (Rivera 2012). Crucially, possessing varied interests may entail consumption of activities that are popular but which are not commonly regarded as 'legitimate', such as film. In fact, these activities may be as important in these labour market processes as forms of culture assumed to be more 'legitimate', such as the theatre. Varied cultural consumption – as a particular form of symbolic mastery – is part of 'the labor [sic] of accumulation and inculcation' so central to the acquisition of embodied cultural capital (Bourdieu 1986).

## EMPIRICAL IMPLICATIONS

There are a number of empirical implications of this discussion. First, broad cultural consumption will predict future earnings because – over and above other factors – the volume of cultural consumption will have some value to firms. Second, the economic returns to varied cultural consumption will be highest for those in occupations with higher barriers to entry: i.e. professional occupations. Third, cultural practices will increase the likelihood of moving into professional occupations where there are higher barriers to entry and where the skills associated with cultural consumption are highly desirable. Fourth, varied cultural consumption will also predict future promotions. Fifth, if cultural consumption is a form of cultural capital then it will influence future earnings through labour market processes and so should not be correlated with future non-labour income, such as investments and benefits.

## DATA AND METHOD

To explore these processes, we use data from UK Household Longitudinal Study, also known as Understanding Society (USoc). USoc is an individual-level panel survey which began in 2009 and includes all of Great Britain. Data is collected over 24 months. For example, data collection for Wave 1 formally began in January 2009 and was completed in December 2010. Wave 2 officially began in January 2010 and was completed in December 2011. The sample includes approximately 30,000 households and 50,000 individuals. The sample design for wave one was based on a clustered, stratified sample of addresses. Households were randomly selected from 2,640 general population sectors and subsequently stratified by population density and ethnicity. Wave 1 of the USoc consisted of an equal-probability clustered sample of 47,520 addresses.

USoc is well-suited to examining the relationship between cultural consumption and future earnings for three reasons. First, data on cultural engagement was collected in 2010-2011 while earnings data was collected in 2010-2011 and 2011-2012. While imperfect, there are very few longitudinal sources of cultural consumption data and so this survey provides a unique view of the association between cultural consumption and future earnings (Reeves 2014). Second, USoc contains a rich set of socio-demographic measures, including parental education, changes in employment status and occupation, and, importantly, earnings. Third, USoc also includes measures of IQ and personality (using the Big-5). This data set enables us to explore the relationship between cultural consumption and future earnings but also to test some of the other mechanisms that might explain these associations. To check the reliability of our findings we replicate our analysis with the British Household Panel Survey, which preceded USoc and allows us to test the same relationship over a much longer time period.

## MEASURING CULTURAL CONSUMPTION

USoc asks respondents: ‘In the last 12 months, have you been to any of these events? (Please only include events attended in your own time or for the purpose of voluntary work.)’ The interviewer then lists each of the 14 activities: ‘film at a cinema’, art exhibition, ‘event which included video or electronic art’, ‘event connected with books or writing’, street arts display, carnival, or the circus (not animals), play/drama, opera/operetta, classical music performance, rock, pop or jazz performance, ballet, contemporary dance, and ‘African people’s dance or South Asian and Chinese dance’. Our primary indicator is a cumulative measure of the total number of activities in which respondents participated ranging from 0 to 14, but we collapse the top end of the scale due to small numbers by recoding values 6 through 14 as 6. These measures of cultural consumption are largely unidimensional and internally reliable ( $r = 0.75$ ). Approximately 27.7% of the sample did not participate in any of these activities while 22.6% participated in 1 activity, 17.5% participated in 2 activities, 11.7% participated in 3 activities, 7.8% participated in 4 activities, 5.3% participated in 5 activities, and 7.4% participated in 6 or more activities.

This additive scale of cultural consumption is not intended to measure omnivorousness; the available measures of cultural practice are largely high-status practices (although there are



some exceptions such as carnivals and the circus) and so do not capture high- and lowbrow tastes within or between genres. Rather, this scale measures the underlying structure of how people approach cultural practices (Warde, Wright and Gayo-Cal 2008). The additive measure assumes that if an individual, for example, participates in 3 activities then the particular combination of activities matters far less than the simple fact that there are 3 activities. In this sense, it is how people engage with cultural practices (namely, the breadth of their practice) that matters rather than what they specifically spend their time doing.

## DEPENDENT VARIABLES

Our main outcome of interest is earnings. USoc records self-reported total gross labour income per month measured in pound sterling. This measure includes over-time and any earnings from a second or third job but not income from a partner.<sup>3</sup> Respondents are asked, where possible, to match their self-reported earnings to payslips, providing further validation. Most of our analyses use the raw earnings data because we believe the results are more directly interpretable but our results are consistent if we use a logged measure of earnings.

Aside from our principle measure of earnings, we are also interested in the mechanisms through which earnings might increase and so use other dependent variables that may be linked with higher earnings. We measure changes in occupation using the National Statistics-Socio-Economic Classification (NS-SEC). As a measure of upward mobility, we create an indicator of whether someone has moved into the professional service class (NS-SEC classes 1 and 2 of the 8-class version) between, for example, 2009 and 2010 given they were not occupied in a professional occupation in 2009. We also construct two measures of promotions. One drawn from job history data, which includes a measure of whether a change in occupation was due to a promotion or not, and the other is derived from whether respondents have become a 'supervisor' in the last 12 months.<sup>4</sup>

Finally, we also conduct a falsification test. In this model, we examine whether cultural consumption is correlated with a dependent variable that theoretically should not be affected by cultural consumption. So, while we predict cultural consumption to affect earnings from the labour market, we would not expect cultural consumption to predict income from sources outside of the labour market, such as investments or savings, and income from benefits and other sources.<sup>5</sup> Therefore in this model our dependent variable becomes non-labour market earnings rather than labour market earnings, and we predict there should be no correlation with cultural consumption.

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<sup>3</sup>We focus on those with contracts in organizations and so exclude small employers and own account workers in small firms, but we check whether including these individuals changes our results.

<sup>4</sup>No specific criteria are used to define 'supervisors' and so respondents answer this question according to their perception of their employment situation. This may create some bias but we minimise this possibility by focussing on change within individuals over time.

<sup>5</sup>This measure of non-labour earnings is validated in the same way as the measure of labour earnings.

## INDEPENDENT VARIABLES

Our main models include the following socio-demographic covariates: sex (1=female), age at date of interview, marital status (0=Never married, 1=Cohabiting, 2=Widowed, divorced, or separated), self-reported health (five-point scale; 0=Very poor, 4=Excellent), educational attainment (1=university degree and 0 otherwise), social class measured using the NS-SEC (0=Routine manual occupations, 1=Semi-routine manual occupations, 2=Lower supervisory and technical occupations, 3=Intermediate occupations, 4=Managerial, administrative and professional occupations), access to a car (1=Has access and 0 otherwise), usual number of hours worked (in the present and one year ahead), contract type (full-time=0; part-time=1) and a series of dummy variables for each of the 19 government office regions of the UK.

Cultural consumption may be correlated with future earnings because of other confounders such as sociability, intellect, or family background. We also include measures of these factors in our models. Family background is measured using: 1) father's education and 2) mother's education. Personality is measured using the Big-5 (openness, agreeableness, conscientiousness, extraversion, and neuroticism). Cognitive ability is measured through four distinct tests: 1) score on a number series question, 2) an immediate word recall task (number of correct items), 3) a numeric ability test (number of correct items), and 4) a verbal fluency test (number of correct answers). (Described in detail in the Web Appendix 1).

One of the main predictors of future earnings is current earnings because earnings are not constantly under negotiation. We include a measure of present earnings in our models predicting future earnings to test whether cultural consumption can meaningfully predict future earnings over and above the impact of current earnings.

## STATISTICAL MODELS

To estimate the association between the number of cultural activities in the present and future earnings we use a lagged-dependent variable, OLS regression model. This model estimates the association between current cultural consumption and future earnings (one year ahead) while accounting for current earnings:

$$Earnings_{it+1} = \beta_0 + \beta_1 Earnings_{it} + \beta_2 Culture_{it} + \beta_3 X_{it} + \epsilon_{it} \quad (1)$$

Here  $i$  is individual and  $t$  is year.  $Earnings$  is the dependent variable and a lag in the model ( $\beta_1$ ). In most of our models,  $Culture$  is the number of activities respondents state they consumed over the last 12 months.  $X$  is a vector of control variables adjusting for various confounders mentioned above. Standard errors are clustered for repeated observations.

This model is a stringent test of our hypothesis because it assumes that economic returns to cultural practice will be observable after only 1 or 2 years. Of course, this model does not assume that every culturally active person will experience these advantages in the same year,

rather it assumes that, on average, culturally active people will be more likely to experience these advantages, therefore increasing earnings over the next 12-24 months (using USoc) or over the next 24 months (using BHPS).

## RESULTS

### IS CULTURAL CONSUMPTION CORRELATED WITH HIGHER FUTURE EARNINGS?

Without adjusting for other covariates, people who participate in an additional cultural activity in the present earn, on average, £175 per month more one year later (95% CI: £162 to £189) (see Table 1: Model 1). This remains largely unchanged when controlling for age, gender, marital status, and health status (Table 1: Model 2). However, once we control for educational attainment, contract type, social class (see Table 1: Model 3), and current earnings the association between current cultural consumption and future earnings is attenuated (Table 1: Model 4). Finally, adjusting for regional differences does not qualitatively alter the association between cultural consumption and earnings. We find that, over and above the impact of current earnings and the other socio-demographic controls, respondents who participate in an additional cultural activity earn £25 per month more in one years' time (95% CI: £16 to £33) than an otherwise identical person (Table 1: Model 5).

Table 1: Cultural practice predicts future income

Covariates	Total gross labour income pay per month (£) in one years' time				
	(1)	(2)	(3)	(4)	(5)
Participate in an additional cultural practice	175.3** (7.00)	199.8** (6.85)	81.4** (6.10)	25.7** (4.49)	24.6** (4.50)
Age		2.43* (1.12)	8.27** (0.93)	-1.29 (0.67)	-1.37* (0.67)
Female		-934.1** (23.7)	-486.1** (23.8)	-135.5** (16.7)	-135.3** (16.7)
<i>Marital status (Never married = baseline)</i>					
Married		374.6** (27.4)	232.5** (24.2)	61.3** (16.9)	64.5** (16.9)
Widowed, divorced, separated		150.9** (38.2)	93.7** (32.1)	31.4 (21.2)	35.4 (21.1)
Health status		172.2** (26.8)	111.4** (22.1)	41.1** (15.3)	41.4** (15.3)
University graduate			603.2** (26.8)	154.4** (19.9)	145.3** (19.6)
<i>Social class (baseline = routine manual)</i>					

Semi-routine occupations	140.3**	59.4**	58.2**		
	(24.0)	(18.7)	(18.7)		
Lower supervisory and technical occupations	283.8**	51.4*	51.2*		
	(31.1)	(24.6)	(24.5)		
Intermediate occupations	353.0**	98.3**	93.4**		
	(27.2)	(22.1)	(21.8)		
Managerial, administrative and professional occupations	960.9**	232.4**	232.2**		
	(28.0)	(28.2)	(27.9)		
Part-time employment (full-time = 0)	-251.4**	-144.7**	-148.5**		
	(45.1)	(29.9)	(30.0)		
Number of hours usually worked	28.7**	20.1**	20.2**		
	(2.65)	(1.95)	(1.95)		
Number of hours usually worked last year	17.1**	-9.13**	-9.06**		
	(1.84)	(1.75)	(1.74)		
Access to a car	-145.3**	-36.8	-63.7**		
	(33.3)	(21.1)	(21.6)		
Usual gross pay per month (£)		0.75**	0.75**		
		(0.023)	(0.024)		
Region dummies	N	N	N	N	Y
Constant	1621.1**	2347.4**	-119.0	169.1*	200.4*
	(17.2)	(81.3)	(126.3)	(83.5)	(86.2)
Observations	19943	19934	15043	15043	15038
$R^2$	0.036	0.13	0.41	0.73	0.74

Notes: Standard errors are clustered for repeated observations and reported in parentheses.

\*  $p < 0.05$ , \*\*  $p < 0.01$

Y = these variables are included in the model. N = they are not included.

Personality type and cognitive ability may predict both cultural consumption and future earnings (Moutafi, Furnham and Crump 2007; Zagorsky 2007) and so we include measures of both personality (using the Big-5) and cognitive ability in our model (Table 2); finding that they do not explain the association between cultural consumption and future earnings.<sup>6</sup>

<sup>6</sup>Note the coefficient in model 1 of table 2 is slightly larger than model 5 in table 1, which it replicates, due to a smaller sample size for the models in table 2. This is because when we retroactively matched cognitive ability and personality scores from later waves and this reduced the available sample size.

Table 2: Cultural practice predicts future income, adjusting for personality and cognitive ability

<b>Covariates</b>	<b>Total gross labour income pay per month (£) in one years' time</b>			
	(1)	(2)	(3)	(4)
Usual gross pay per month (£)	0.75** (0.024)	0.74** (0.024)	0.75** (0.024)	0.74** (0.024)
Participate in an additional cultural practice	24.6** (4.50)	19.5** (4.62)	23.3** (4.61)	18.4** (4.71)
<i>Cognitive ability</i>				
Score on number series questions		0.95** (0.33)		0.98** (0.33)
Cognitive ability: Immediate word recall: Number of correct items		5.61 (5.35)		5.62 (5.34)
Cognitive ability: Numeric ability: Count of items answered correctly		36.0** (8.76)		35.6** (8.77)
Cognitive ability: Verbal fluency: Count of correct answers		0.71 (1.22)		0.54 (1.22)
<i>Big-5 personality scores</i>				
Openness			5.08 (5.84)	4.23 (6.04)
Agreeableness			-19.1** (7.06)	-19.4** (7.24)
Conscientiousness			12.5 (6.54)	13.1 (6.72)
Extraversion			10.3 (5.39)	10.1 (5.50)
Neuroticism			-10.6* (4.11)	-11.7** (4.24)
Socio-demographics (Model 5: Table 1)	Y	Y	Y	Y
Region dummies	Y	Y	Y	Y
Constant	200.4* (86.2)	-513.4* (199.9)	216.2* (86.7)	-500.9* (199.9)
Observations	15038	14438	15038	14438
$R^2$	0.74	0.73	0.74	0.74

Notes: Standard errors are clustered for repeated observations and reported in parentheses.

Sample restricted to those individuals who have non-missing values for both the cognitive ability tests and the personality tests. \*  $p < 0.05$ , \*\*  $p < 0.01$   
 Y = these variables are included in the model. N = they are not included.

People who are broad cultural consumers are more likely to come from affluent family backgrounds and so cultural consumption may predict future earnings because it is a proxy for family background. We control for social origin by including measures of father's education and mother's education in our model (Table 3); finding that people who participate in an additional cultural practice still earn approximately £24 more per month than those who do not.

Table 3: Cultural practice predicts future income, adjusting for parental background

<b>Covariates</b>	<b>Total gross labour income pay per month (£) in one years' time</b>	
	Without parental controls (1)	With parental controls (2)
Usual gross pay per month (£)	0.75** (0.024)	0.75** (0.024)
Participate in an additional cultural practice	24.6** (4.50)	24.2** (4.48)
Father's education (baseline = never went to school)	N	Y
Mother's education (baseline = never went to school)	N	Y
Socio-demographics (Model 5: Table 1)	Y	Y
Region dummies	Y	Y
Constant	200.4* (86.2)	195.1* (87.2)
Observations	15038	15038
$R^2$	0.74	0.74

Notes: Standard errors are clustered for repeated observations and reported in parentheses.

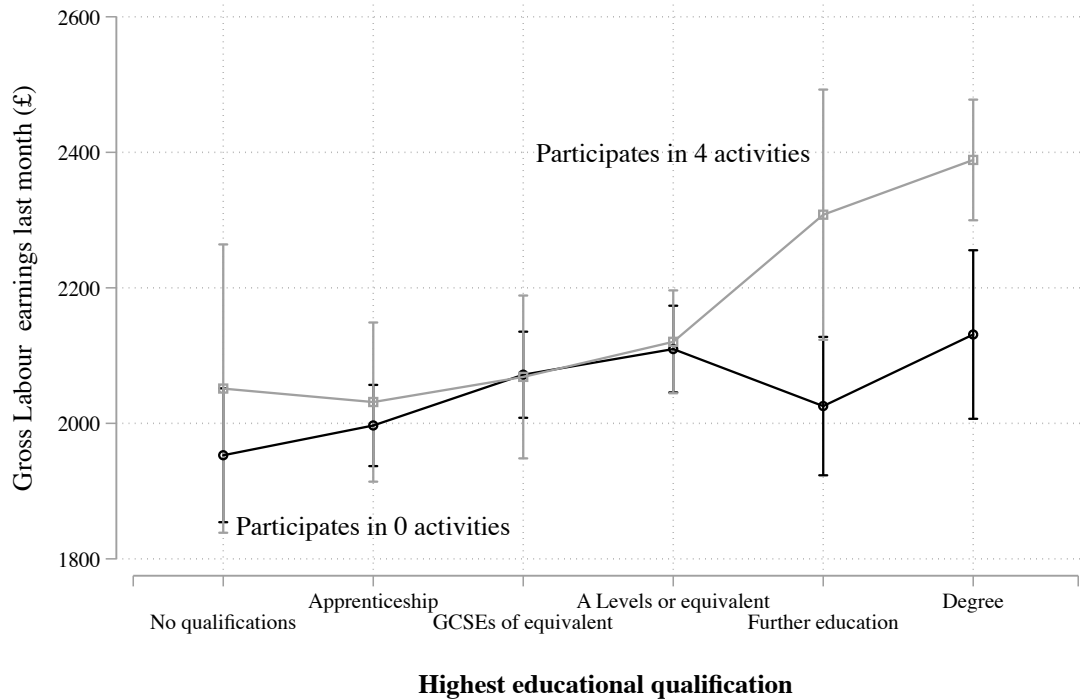
\*  $p < 0.05$ , \*\*  $p < 0.01$

Y = these variables are included in the model. N = they are not included.

## IS THE ASSOCIATION BETWEEN CULTURAL CONSUMPTION AND EARNINGS HIGHER WHEN THE BARRIERS TO ENTRY ARE GREATER?

We next explore whether cultural consumption has this same predictive power for people in different positions in the labour market. We anticipated that the association between cultural consumption and earnings would be higher for people in highly skilled labour market positions - i.e., those with university degrees and who are working in professional occupations. To test this hypothesis we re-estimate model 5 in table 1 but we now include an interaction term between educational attainment and our measure of cultural consumption. (We also estimate the same model using an occupation-culture interaction.) Here we use education and occupa-

Figure 1: Association between cultural practices and earnings is greater for those with more education



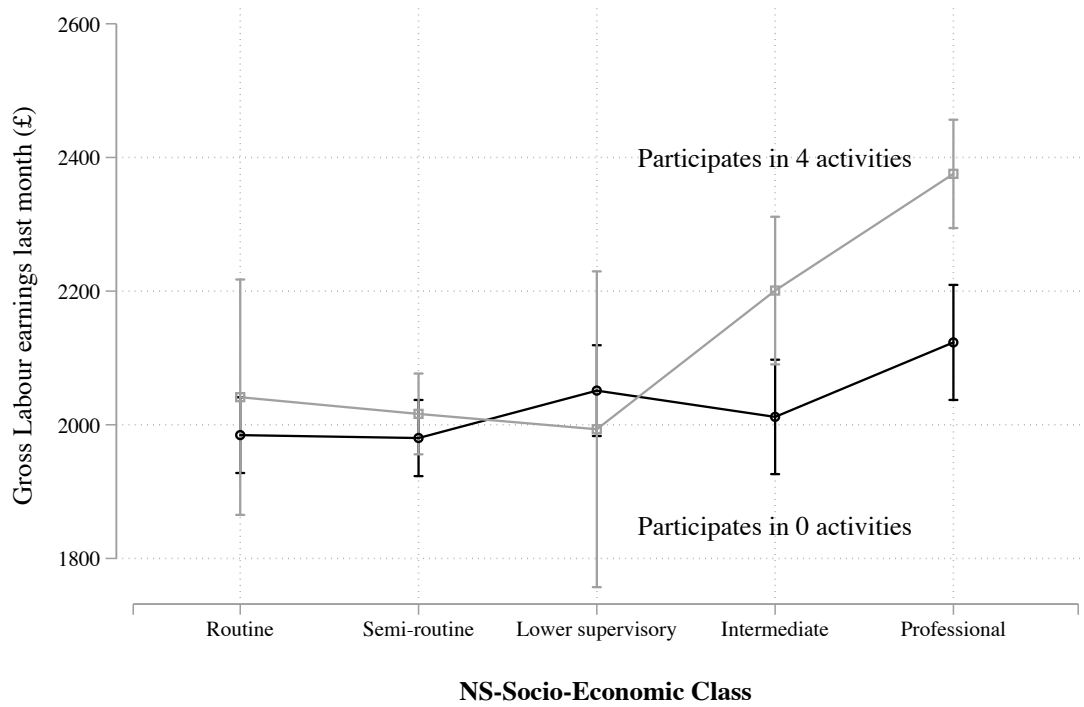
Notes: Vertical bars are 95% confidence intervals. Results come from Table 1: Model 5 with one difference: this model includes an interaction term between cultural participation and education. Education levels (1 = No qualifications, 2 = Apprenticeships, 3 = GCSEs of equivalent, 4 = A Levels or equivalent, 5 = Further education, and 6 = University graduate).

tion as proxies for highly skilled labour market positions where the barriers to entry may be higher.

We find that the economic returns to cultural consumption are greater for those with higher levels of education (figure 2) and for those in higher social classes (see figure 3). Cultural practice has no clear association with future earnings among those whose highest qualification is GCSEs (i.e., left school at age 16). However, among university graduates, cultural practice is associated with substantially higher future earnings. The difference in monthly earnings in one years' time between someone who participates in none of the activities versus those who participate in 4 activities is £258 per month (95% CI: £102 to £413).

Moreover, if we split the professional occupations into lower (NS-SEC 2) and higher (NS-SEC 1) professionals we see a similar story. For someone in a higher professional occupation, the difference in monthly earnings in one years' time between someone who participates in none

Figure 2: Association between cultural practices and income is greater for those in the service class



Notes: Vertical bars are 95% confidence intervals. Results come from Table 1: Model 5 with one difference: this model includes an interaction term between cultural participation and occupation class.

of the activities versus those who participate in 4 activities is £351 per month (95% CI: £71 to £631). Whereas, for someone in a lower professional occupation, the difference £209 per month (95% CI: £89 to £329). These estimates are imprecise and the confidence intervals are overlapping but the association is indeed stronger for respondents in higher professional jobs than it is for those in lower professional jobs.

## REPLICATING OUR FINDINGS USING THE BRITISH HOUSEHOLD PANEL SURVEY

In our main models we only explore the relationship between cultural consumption and earnings over a relatively short period and so, to test whether these results are an artefact of this short panel, we replicate our main models using data from British Household Panel Survey (BHPS)<sup>7</sup> - an individual-level longitudinal survey from the UK which preceded USoc but ex-

<sup>7</sup>The British Household Panel Survey (BHPS). The BHPS is an individual-level longitudinal survey (of a clustered, stratified sample of addresses) which began in 1991 and includes approximately 5,500 households and 10,000 individuals.



pands the number of years substantially. Data on leisure activities in the BHPS is only available every other year from 1996 to 2008 and the range of leisure activities in the survey is narrower (see Web Appendix 2). Despite these differences, we re-estimate similar models exploring whether the number of leisure activities is correlated with earnings in two years' time (the biennial data collection for the cultural consumption data means we look two years into the future). As above, the volume of cultural consumption is associated with higher earnings, even after including the same set of controls (Web Appendix 2).

## DOES CULTURAL CONSUMPTION PREDICT FUTURE SOCIAL MOBILITY AND PROMOTIONS?

If cultural capital explains the link between cultural consumption and future earnings then we would expect that cultural consumption will increase the likelihood of upward social mobility, i.e., of moving into the professional service class. Further, cultural consumption may increase the likelihood of achieving a promotion because this too will be influenced by cultural capital processes.

To test these hypotheses, we estimated - using USoc - whether participating in more cultural activities increased the likelihood of moving into the service class in one years' time (given that they are not currently a member of that social class in the present) over and above the impact of our control variables. Those who participate in an additional cultural activity are more likely to move into the professional service class (AOR 1.10, 95% CI: 1.02 to 1.18) compared to an otherwise similar person (Table 4). This group of upwardly mobile people are predominantly university graduates (AOR 2.14, 95% CI: 1.58 to 2.88) who are in intermediate occupations (AOR 2.92, 95% CI: 1.77 to 4.79). These individuals are already in social positions proximal to the professional service occupations, suggesting that cultural consumption is most influential for those who are already in similar to those in the service class.

Table 4: Cultural practice increases the likelihood of upward mobility for some groups

<b>Covariates</b>	<b>Odds ratios of</b>		
	Moving into the service class§	Upward mobility but not into service class¶	Moving into higher professional occupation‡
	(1)	(2)	(3)
Participate in an additional cultural practice	1.10* (0.042)	0.95 (0.058)	1.10† (0.062)
Region dummies	Y	Y	Y
Cognitive ability	Y	Y	Y
Big-5 Personality	Y	Y	Y
Socio-demographics (Model 5: Table 1)	Y	Y	Y
Observations	7274	4824	4940

Notes: Standard errors are clustered for repeated observations and reported in parentheses.

§ - Predicts likelihood of moving into the service class given that they were not in the service class at t-1.  
 ¶ - Predicts likelihood of upward mobility but not into the service class given that they were not in the service class at t-1.  
 ‡ - Predicts likelihood of moving into high professional occupation given that they were in lower professional occupation at t-1.  
 †  $p < 0.1$ , \*  $p < 0.05$ , \*\*  $p < 0.01$   
 Y = these variables are included in the model. N = they are not included.

Further, digging deeper, we find cultural consumption is not associated with upward mobility among non-professional occupations (AOR = 0.95, 95% CI: 0.85 to 1.07) whereas cultural consumption tends to be positively associated with upward mobility within the service class (AOR = 1.10, 95% CI: 0.99 to 1.28) - i.e., from lower professional to higher professional occupations.

People who participate in a larger number of cultural activities are also more likely to become a supervisor over the next 12 months (AOR 1.06, 95% CI: 0.99 to 1.13), even without changing occupations (Table 5),<sup>8</sup> and the same is also true in the BHPS data - which covers a longer time period (AOR 1.12, 95% CI: 1.05 to 1.19). Likewise, again using BHPS data (this measure is only available here), people who engage in a range of cultural consumption have a greater likelihood of changing job because of a promotion (AOR 1.19, 95% CI 1.08 to 1.32) (Web Appendix 3).

Table 5: Cultural practice increases the likelihood of becoming supervisor

Covariates	Odds ratio of	
	Becoming a supervisor in one years' time (USoc)	Becoming a supervisor in two years' time (BHPS)
	(1)	(2)
Participate in an additional cultural practice	1.06† (0.034)	1.12** (0.0335)
Region dummies	Y	Y
Cognitive ability	Y	Y
Big-5 Personality	Y	Y
Socio-demographics (Model 5: Table 1)	Y	Y
Observations	7767	8036

Notes: Standard errors are clustered for repeated observations and reported in parentheses. Model 2 adjusts for a linear time trend. Predicts likelihood of becoming a supervisor given that they were not a supervisor at t-1. Both models are also restricted to those who stay in the same occupational code (SOC code). †  $p < 0.1$ , \*  $p < 0.05$ , \*\*  $p < 0.01$   
 Y = these variables are included in the model. N = they are not included.

<sup>8</sup>To ensure that people are become supervisors and not changing occupations, we restrict this analysis to only those people who remain within the same detailed occupation code (SOC code).

## DOES CULTURAL CONSUMPTION INCREASE NON-LABOUR INCOME?

We have argued that cultural consumption as a form of embodied cultural capital will predict higher earnings in the future; but should not affect all forms of income equally. For example, we would not expect cultural consumption to be correlated with income from sources outside of the labour market, such as income from investments and/or benefits. Therefore, as a falsification test, we examine whether cultural consumption predicts future non-labour income using the same model described in table 1 except that now the dependent variable (including the lagged measure) is non-labour income (Web Appendix 4). This is not a perfect comparison because fewer people have access to non-labour income and so the sample size in this regression model is considerably smaller. But, even using this restricted sample, we still find that the relationship between cultural consumption and labour earnings remains the same. In contrast, however, there is no clear association between greater cultural consumption and future non-labour income (the coefficient of the association is zero).

## SENSITIVITY TESTS

We also estimate a variety of sensitivity tests to ensure our results are not the consequence of our model specification. These are described in detail in web appendices 5-14. We briefly outline them here but in every case they do not make a difference to our findings: (1) we interrogate whether our assumption of uni-dimensionality in our measures of cultural consumption is justified (Web Appendix 5); (2) we estimate a fixed-effects model (Web Appendix 6); (3) we restrict our models to those people who remain in the same occupational code (SOC code), removing people who change job without changing class (Web Appendix 7); (4) we use more fine-grained social class data (Web Appendix 8); (5) we log-transform wages (Web Appendix 9); (6) we removed outliers, namely those individuals whose earnings increased or declined by more than £10,000 over a one-year period ( $n = 19$ ) (Web Appendix 10); (7) we re-introduce small employers and own account workers in small firms (Web Appendix 11); (8) we re-estimate our main model including all possible control variables (including cognitive ability, personality and family background), which reduces the sample but does not change our findings (Web Appendix 12); (9) we test - using BHPS because of the longer duration - whether the trajectory of earnings change is driving the results by including an additional lag in the model to capture this trajectory (Web Appendix 13); and (10) we also modelled the change in earnings (rather than a lagged dependent variable model) (Web Appendix 14). Taken together, these sensitivity tests suggest the association between cultural consumption and future earnings is highly robust to alternative model specifications.

## DISCUSSION

Our analysis of individual-level, longitudinal data has found that cultural consumption predicts future earnings. People who participate in a wide variety of cultural activities earn more in one year's time than otherwise similar people who participate in a narrower range of cultural activities. This association remains even after we account for socio-demographic characteristics, educational attainment, family background, measures of cognitive ability, and personality. But this association is concentrated within specific groups and is largest among those who pos-

sess a university degree or who work in professional occupations where the barriers to entry are higher. This suggest it is not just those in elite firms or the creative industries who benefit from being culturally active but professional occupations more broadly. Finally, we also document some of the mechanisms that may explain this relationship. For example, participating in a wide variety of cultural practices also increases the likelihood of upward social mobility, of becoming a supervisor within the same occupation, and of changing jobs because of a promotion.

## CULTURAL CONSUMPTION, CULTURAL CAPITAL, AND THE SHAPE OF THE SOCIAL SPACE

The convertibility of cultural consumption into cultural capital may have important implications for debates about how the volume and composition of capital structure the social space. In *Distinction*, Bourdieu (1984) argues the social space is divided by two axes: the primary axis captures the volume of capital and the secondary axis captures the composition of capital. Yet, this Cartesian structure of the social space has been rather elusive in the UK, where the volume rather than the composition of capital appears to dominate the field of social positions (Bennett et al. 2009). Such differences in the shape of the social space between contexts may be attributable to variation in both the distribution of, and the relations between, key forms of economic and cultural capital. The convertibility of cultural capital into economic capital, then, may fundamentally reshape the degree to which social divisions are determined by the volume or the composition of capital. If, as our results suggest, cultural consumption - as one manifestation of embodied cultural capital - is easily converted into economic capital then distinctions between groups on the composition axis may be less pronounced, albeit not entirely eradicated, than they might be in a society where cultural consumption is less easily converted into financial rewards.

Educational systems cross-nationally may play a crucial role in structuring the distribution of cultural capital (embodied and institutionalized) and determining the convertibility of cultural consumption (Bourdieu 1986). In the UK, it is not uncommon to find both bankers and journalists, stockbrokers and academics attending the same schools and universities, and even studying the same subjects (Reeves et al. 2017). Not only do alumni share similar credentials but the common form of embodied cultural capital acquired during these school years actually expands their career options. Other countries, by contrast, possess educational systems with clearly delineated educational careers that funnel students toward particular professions and in so doing may inculcate particular forms of embodied cultural capital that have more limited convertibility (Bourdieu 1984). In these settings, the composition axis may be more pronounced than contexts where students are less rigidly directed toward certain professions. These are obviously empirical questions that require further analysis but our results suggest that the relations between key forms of capital may play a central role in explaining cross-national differences in the social space that - at first glance - may seemingly undermine Bourdieu's primary theoretical claims.

## CULTURE AND THE REPRODUCTION OF INEQUALITY

The process of converting cultural consumption into cultural capital also has implications for the reproduction of inequality, where there has been a long-standing debate. Those influenced by Bourdieu have argued that cultural consumption is one mechanism through which advantaged is transmitted from one generation to the next (Bourdieu 1984; Lareau 2003). Even with the increased accessibility and availability of cultural consumption in many western societies (Peterson and Kern 1996), there has been concern that varied cultural interests are just a new form of distinction, a way of signalling advantaged and accessing elite social positions. In contrast, others have argued that broad cultural consumers are simply more tolerant individuals who are open to a broad range of cultural forms (Chan 2013). Our results suggest that, because some occupations explicitly use cultural consumption to assess candidates, people who consume a range of cultural items are more likely to earn more, be socially mobile, and be promoted. By assessing candidates on these attributes, these firms are selecting on cultural signals that are most common among the middle-class. In short, our results are consistent with the view that cultural consumption plays a significant role in the reproduction of inequality.

Moreover, not only does cultural consumption influence inequality, but our findings suggest that patterns of cultural consumption sit on the pathway between family background and life outcomes, such as earnings. People who are raised in affluent social positions are more likely to develop broad cultural tastes when they are adults (Lareau 2003) and these may increase the likelihood of entering high status occupations and being promoted. These findings complement the large body of work documenting how parents help their children obtain power and privilege through acquiring a range of cognitive and non-cognitive skills (Blanden, Gregg and Macmillan 2007). They also inform recent work on the 'class ceiling' within professional occupations, where people from less privileged social backgrounds earn less while working in the same job than those who are from more affluent backgrounds (Laurison and Friedman 2016). Professionals from less affluent family backgrounds still tend to participate less frequently in a broad range of cultural activities than professionals from more privileged backgrounds. Although our results only cover a relatively brief period, they suggest differences in cultural consumption by class origin may partly explain the gap in earnings by class background because less culturally engaged professionals may be a poorer 'fit' within the firm and are therefore less likely to 'get on' even though they have already 'got in'. Families can transmit this privilege by consciously cultivating culturally active children, which may, in turn, increase the likelihood of entering high-status social positions. Whereas, the absence of the correct embodied cultural capital may hamper the career progression of the upwardly mobile.

Our results also draw attention to some of the (missing) pathways - the routine practices found in everyday interactions - that contribute to producing inequality (Lamont, Beljean and Clair 2014). Hiring as a process of selecting, or matching, on cultural consumption is an example of one such routine practice (Lamont, Beljean and Clair 2014); and our data suggests that the same can be said of promotions. Whether conscious or not (Ashley et al. 2015), micro-interactions in interviews or decision-making processes are illustrative of identification, 'i.e. the process through which individuals and groups identify themselves' and select individuals to become members of these groups based on shared characteristics (Lamont, Beljean and

Clair 2014). Identification is one of the mechanisms through which culture contributes to inequality because selecting on whether candidates possess 'cultural fit', 'poise', or 'polish' is a cognitive strategy that identifies some people as strong candidates and which simultaneously favours those from more privileged social positions. Through the identification of cultural fit, for example, evaluators are contributing to aggregate inequalities (Ashley et al. 2015; Lareau 2003).

## LIMITATIONS AND FUTURE RESEARCH

There are important limitations to this study. First, our measure of cultural consumption is fairly limited because it fails to distinguish, for example, between genres and therefore our results may miss more fine-grained distinctions made by informed cultural consumers. Second, omitted confounders may still bias our results. Despite this, our models are consistent with a causal effect of cultural consumption on earnings. They are: 1) robust to different model specifications, 2) replicable in other related datasets, and 3) theoretically precise (that is, they are observable among the groups we would expect). Moreover, the relatively short period analysed in our models also represents a difficult test of our theory. Notwithstanding the strengths of our analysis, more evidence documenting the mechanisms connecting cultural consumption and earnings would bolster the case for a causal interpretation. Third, our measure of cultural consumption may be soaking up residual variation created by measurement error on other associated variables, such as personality, cognitive ability, and family background.

Fourth, our interpretations have focused on the supply side of the employment process - hiring and promotion - rather than the demand side - career choice; and this may also influence the association between cultural preferences and income (Koppman 2016). For example, some industries and even firms develop sub-cultures where particular kinds of cultural interests may be highly valued and our analysis almost certainly overlooks these subtleties. Without more detailed data on cultural practices for individuals and firms over time it will be challenging to explore these questions with sufficient precision using quantitative methods. This suggests there is a clear space where qualitative approaches to these questions could fill a crucial gap in this debate.

Fifth, beyond the relationship between embodied cultural capital and economic capital, there are many other mechanisms through which cultural capital can be converted into economic capital (Bourdieu 1986; Jæger and Breen 2016). We have already mentioned the link between institutionalized cultural capital (i.e., credentials) and economic capital (Hout 2012), but other mechanisms also exist. For example, embodied cultural capital may affect the acquisition of institutionalized cultural capital and this, in turn, may affect economic capital (Sullivan 2001; Zimdars, Sullivan and Heath 2009). Additionally, economic capital certainly affects the acquisition of objectified cultural capital but whether and how objectified cultural capital can be converted into economic capital is far less clear. More work is needed exploring all of these pathways between cultural and economic capital.

Finally, and perhaps most importantly, reducing cultural consumption to discrete measures of annual participation necessarily overlooks vital aspects of how cultural consumption (viewed

as the manifestation of underlying dispositions or symbolic mastery) may become embodied cultural capital, aspects that may only be fully captured through more detailed description of cultural engagement through ethnographic or qualitative methods. We hope future work unpacks the empirical regularities documented in this paper by exploring how, in practice, cultural consumption becomes cultural capital.

## CONCLUSION

Our results indicate that cultural consumption and income are positively correlated in part because consuming legitimate cultural activities increases the likelihood of upward social mobility, of becoming a supervisor, and of being promoted. Cultural consumption predicts future earnings, over and above the influence of family background, education, cognitive ability, and personality. The convertibility of cultural consumption into financial rewards may partially explain the link between family background (which is a strong predictor of cultural consumption) and life outcomes, and appears to be one of the mechanisms through which inequality is reproduced.

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## ONLINE SUPPLEMENT

Web Appendix 1: Measures of cognitive ability in Understanding Society

Web Appendix 2: Cultural practice predicts future incomes, using BHPS rather than Understanding Society

Web Appendix 3: Cultural practice increases the likelihood of changing job because of promotion

Web Appendix 4: : Cultural practice is not associated with future non-labour earnings

Web Appendix 5: Assessing the uni-dimensionality of our additive measure of cultural consumption

Web Appendix 6: Cultural practice is correlated with income, fixed effects, using BHPS data

Web Appendix 7: Cultural practice predicts future incomes, restricting the observations to only those who remain in the same occupational code (SOC code)

Web Appendix 8: Cultural practice predicts future incomes, adjusting for detailed socio-economic groupings

Web Appendix 9: Cultural practice predicts future log-transformed incomes

Web Appendix 10: Cultural practice predicts future incomes, removing outliers (those whose incomes increased or declined by more than £10,000 over a one year period)

Web Appendix 11: Cultural practice predicts future incomes, including those who are own account workers in small firms and smaller employers

Web Appendix 12: Cultural practice predicts future incomes, including measures of cognitive ability, personality, and family background

Web Appendix 13: Cultural practice predicts future incomes, adjusting for an additional lag in income, using BHPS data

Web Appendix 14: Cultural practice and the association with change in incomes, using BHPS data

## Web Appendix 1: Measures of cognitive ability in Understanding Society

The cognitive ability measures for Understanding Society were conducted with adults of all ages, beginning with age 16. We include four variables in our analysis.

**Memory:** For this task, participants are asked to remember as many words as they can from a list of 10 words, which are read by a computer to standardise the presentation and speed of the word list. This is the 'Cognitive ability: Immediate word recall: Number of correct items' variable.

**Score on number series questions:** For this task, respondents are given a pencil and paper and asked to write down the number sequences as read by the interviewer. The number series consists of several numbers with a black number in the series. The respondent is then asked which number goes in the black.

**Numeric ability:** In this task, respondents are asked up to five questions that are graded in complexity. These questions reflect how people use numbers in everyday life, how will a sofa cost if the price is £300 but it is now in a half-price sale. This is the 'Cognitive ability: Numeric ability: Count of items answered correctly' variable.

**Verbal fluency:** For this task, respondents are asked to name as many animals as they can in one minute. This is the 'Cognitive ability: Verbal fluency: Count of correct answers' variable.

Web Appendix 2: Cultural practice predicts future incomes, using BHPS rather than Understanding Society

To construct the measure of cultural consumption in this model we used the following procedure. Respondents are shown a list of activities on a card and then asked: 'Tell me how frequently you do each one'. We have examined responses to five activities: 1) going to the cinema, 2) watching live sport, 3) attending the theatre, a concert, or another live performance, 4) eating at a restaurant, café or pub, and 5) going to a club or pub. These variables were recoded from a five-point scale to a two point scale where 1 = several times per year or more and 0 = once per year or less. We then created a cumulative measure of the total number of activities in which respondents participated ranging from 0 to 5.

<b>Covariates</b>	Total gross labour income pay per month (£) in two years' time (1)
Usual gross pay per month (£)	0.54** (0.12)
Participate in an additional cultural practice	52.9** (15.6)
Socio-demographics (Model 5: Table 1)	Y
Region dummies	Y
Cognitive ability	Y
Big-5 personality scores	Y
Constant	416.0** (95.0)
Observations	18626
$R^2$	0.52

Notes: Standard errors are clustered for repeated observations and reported in parentheses. This model adjusts for a linear time trend.

\*  $p < 0.05$ , \*\*  $p < 0.01$

Y = these variables are included in the model. N = they are not included.

Web Appendix 3: Cultural practice increases the likelihood of changing job because of promotion, BHPS

<b>Covariates</b>	Odds ratio of being promoted in two years' time (1)
Participate in an additional cultural practice	1.19** (0.061)
Socio-demographics (Model 5: Table 1)	Y
Region dummies	Y
Cognitive ability	Y
Big-5 personality scores	Y
Constant	416.0** (95.0)
Observations	18626
$R^2$	0.52

Notes: Standard errors are clustered for repeated observations and reported in parentheses. This model adjusts for a linear time trend.

Predicts likelihood of being promoted versus not changing role.

\*  $p < 0.05$ , \*\*  $p < 0.01$

Y = these variables are included in the model. N = they are not included.

Web Appendix 4: : Cultural practice is not associated with future non-labour earnings

	Total gross non-labour income (£) per month in one years' time (1)	Total gross labour income (£) per month in one years' time (2)
<b>Covariates</b>		
Participate in an additional cultural practice	3.23 (3.74)	19.4** (4.73)
Region dummies	Y	Y
Lagged dependent variable	Y	Y
Socio-demographics (Model 5: Table 1)	Y	Y
Observations	8911	8911

Notes: Standard errors are clustered for repeated observations and reported in parentheses. Model 2

\*  $p < 0.05$ , \*\*  $p < 0.01$

Y = these variables are included in the model. N = they are not included.



Web Appendix 5: Assessing the uni-dimensionality of our additive measure of cultural consumption

Part A: High-status and lower-status cultural practice predict future income

To measure high-status consumption, we select the 10 most popular activities and, adjusting for age and sex, estimate the odds ratio of participation for university graduates versus non-graduates. We consider the five activities with the highest odds ratios (all are above 3.5) as 'high-status activities'. These activities are: classical music, the opera, book events, visiting a gallery, and visiting street art. The remaining five we consider to be lower-status activities (albeit not necessarily low status activities): music concerts, attending a play/drama, attending a carnival, seeing video art, and going to the cinema.

<b>Covariates</b>	Total gross labour income pay per month (£) in one years' time (1)
Participate in an additional high-status cultural practice	25.58** (9.15)
Participate in an additional lower-status cultural practice	23.75** (7.08)
Socio-demographics (Model 5: Table 1)	Y
Region dummies	Y
Lagged dependent variable	Y
Observations	15038

Notes: Standard errors are clustered for repeated observations and reported in parentheses.

\*  $p < 0.05$ , \*\*  $p < 0.01$

Y = these variables are included in the model. N = they are not included.

Part B: Latent class analysis of the uni-dimensionality assumption

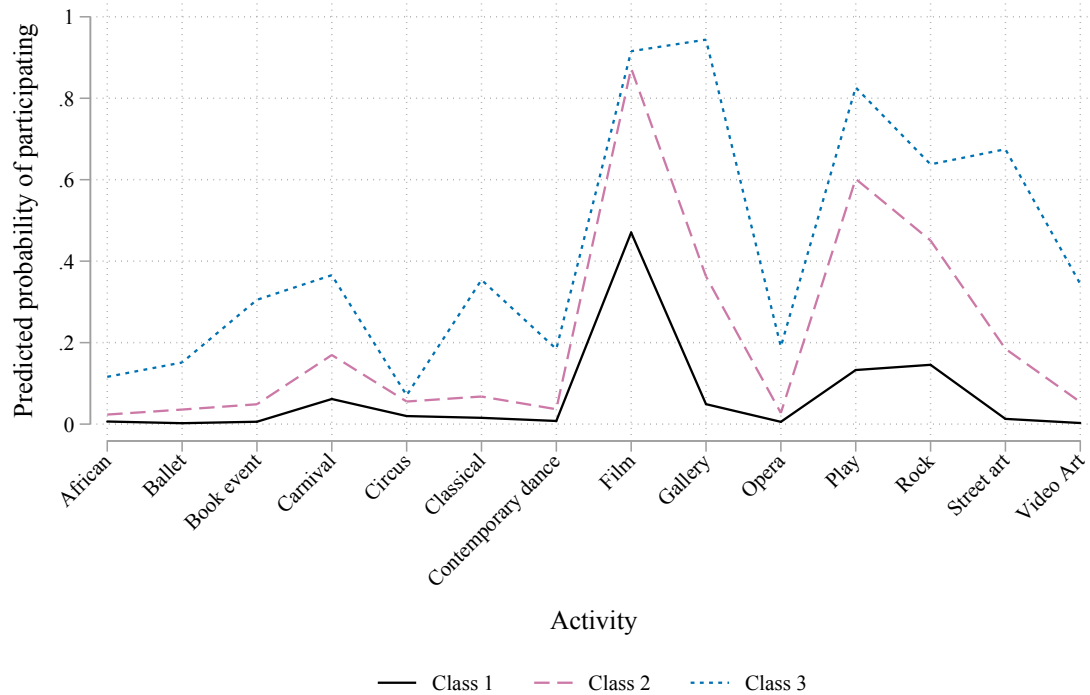
We also explore the unidimensionality assumption in more detail by estimating a latent class model across all activities. The results suggest that a 3-class solution is the most parsimonious (the posterior probabilities arising from this model are displayed in the figure below).

Inspection of the latent class results suggests the following interpretation:

Class 1 (45% of the sample) comprises those who are relatively likely to visit the cinema, but are unlikely to participate in any other cultural activity.

Class 2 (43% of the sample) comprises those who are likely to visit the cinema, but are also relatively more likely to attend plays and rock concerts, and to visit galleries.

Figure 3: Posterior Probabilities of Participation for each cultural activity across the 3-class solution to a Latent Class Analysis of Cultural Consumption.



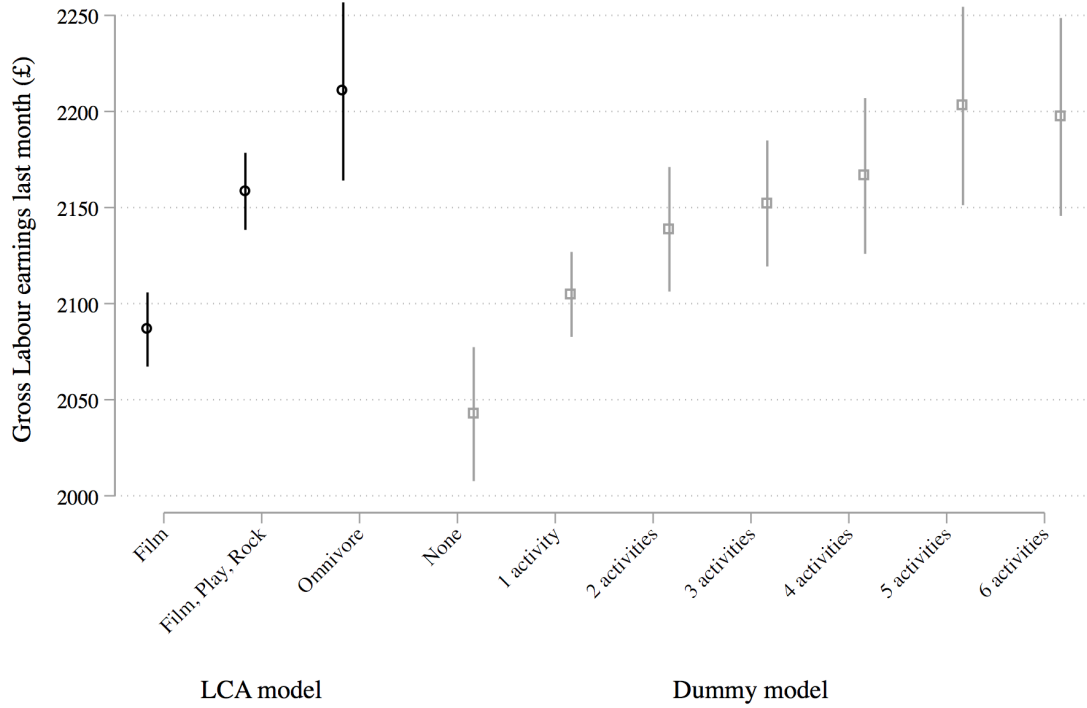
Class 3 (12% of the sample) comprises those who are relatively likely to participate in all of the activities listed above, and, in addition, are relatively more likely to visit a video art installation, attend a book event, and attend a classical concert.

The primary distinction between these classes is that each one consumes a larger spectrum of activities. We believe this argues in favour of a simple cumulative measure of cultural consumption.

As a final test of whether the latent class model adds any insight to our results over our additive measure, we also conduct a regression analysis wherein we compare the results from the latent class models with a categorical measure of the number of activities. The results of this model are displayed in the figure below. These results suggest that considering separate ‘classes’ of cultural consumer does not lend additional insight above and beyond a simple, cumulative measure.

Taken together, these extra analyses suggest that the results we obtain using this unidimensional measure are not a function of how we have constructed the measure. We obtain almost exactly the same results when we relax the assumption of unidimensionality using latent class analysis.

Figure 4: Association between cultural consumption and future earnings using a measure of cultural consumption taken from a latent class model and an additive measure of cultural consumption treated as a categorical measure.



Web Appendix 6: Cultural practice is correlated with income, fixed effects, using BHPS data

Using BHPS data due to a longer data collection period, we estimated the relationship between cultural consumption and earnings using a fixed-effects model instead of a lagged dependent variable model. We have not used fixed-effects modelling in our main analyses because this tests a slightly different hypothesis from the one we are examining in this paper. A fixed-effects model would test whether change in cultural consumption within person A is correlated with change in income for that same individual. This model would estimate a different relationship between the dependent and independent variable than we are hypothesising, suggesting that incomes increase if an individual begins consuming more cultural activities. Instead, we are testing whether people who participate in more cultural activities earn more in the future, similar the relationship between IQ and earnings. Notwithstanding these problems we found that the fixed-effects model shows a positive relationship between cultural consumption and earnings, although the coefficient is smaller.

<b>Covariates</b>	<b>Total gross labour income pay per month (£) in two years' time</b>					
	(1)	(2)	(3)	(4)	(5)	(6)
Participate in an additional cultural activity	14.7* (6.85)	14.6* (6.81)	14.2* (6.78)	13.3* (6.76)	17.7** (6.79)	16.8* (6.80)
Age		-44.1 (27.6)	-44.2 (27.6)	-41.3 (27.8)	-41.5 (27.8)	-41.8 (27.8)
Health status			16.7* (6.63)	15.1* (6.58)	13.8* (6.57)	13.1* (6.57)
Social class				99.2** (5.41)	95.5** (5.39)	93.5** (5.40)
<i>Marital status (Never married = baseline)</i>						
Married					265.8** (28.0)	256.4** (28.0)
Living as a couple					183.8** (20.7)	173.6** (20.7)
Widowed, divorced, separated					188.0** (32.1)	181.9** (32.1)
Access to a car						89.8** (11.9)
Constant	709.7** (23.0)	2011.5* (812.2)	1981.4* (809.9)	1577.3 (815.6)	1426.4 (811.8)	1389.9 (812.2)
Observations	49531	49529	49523	49264	49260	49203

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$R^2$	0.12	0.12	0.12	0.13	0.13	0.13
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Notes: Standard errors are clustered for repeated observations and reported in parentheses.

\*  $p < 0.05$ , \*\*  $p < 0.01$

Y = these variables are included in the model. N = they are not included.

Web Appendix 7: Cultural practice predicts future incomes, restricting the observations to only those who remain in the same occupational code (SOC code)

	Total gross labour income pay per month (£) in one years' time
<b>Covariates</b>	(1)
Usual gross pay per month (£)	0.75** (0.024)
Participate in an additional cultural practice	24.1** (4.76)
Socio-demographics (Model 5: Table 1)	Y
Region dummies	Y
Constant	178.0** (90.6)
Observations	15038
$R^2$	0.74

Notes: Standard errors are clustered for repeated observations and reported in parentheses.

\*  $p < 0.05$ , \*\*  $p < 0.01$

Y = these variables are included in the model. N = they are not included.

Web Appendix 8: Cultural practice predicts future incomes, adjusting for detailed socio-economic groupings

	Total gross labour income pay per month (£) in one years' time
<b>Covariates</b>	(1)
Usual gross pay per month (£)	0.73** (0.024)
Participate in an additional cultural practice	23.4** (4.48)
Socio-demographics (Model 5: Table 1)	Y
Region dummies	Y
Constant	723.98** (99.86)
Observations	15038
$R^2$	0.74

Notes: Standard errors are clustered for repeated observations and reported in parentheses.

All models adjust for a linear time trend.

Model adjust for Socio-Economic Groups rather than NS-SEC.

\*  $p < 0.05$ , \*\*  $p < 0.01$

Y = these variables are included in the model. N = they are not included.

Web Appendix 9: Cultural practice predicts future log-transformed incomes

	Total gross labour income pay per month (£) in one years' time (1)
<b>Covariates</b>	
Log-transformed usual gross pay per month (£)	0.63** (0.013)
Participate in an additional cultural practice	0.012** (0.0018)
Socio-demographics (Model 5: Table 1)	Y
Region dummies	Y
Constant	2.36** (0.091)
Observations	15031
$R^2$	0.76

Notes: Standard errors are clustered for repeated observations and reported in parentheses.

\*  $p < 0.05$ , \*\*  $p < 0.01$

Y = these variables are included in the model. N = they are not included.



Web Appendix 10: Cultural practice predicts future incomes, removing outliers (those whose incomes increased or declined by more than £10,000 over a one year period)

	Total gross labour income pay per month (£) in one years' time
<b>Covariates</b>	(1)
Usual gross pay per month (£)	0.80** (0.015)
Participate in an additional cultural practice	16.6** (3.60)
Socio-demographics (Model 5: Table 1)	Y
Region dummies	Y
Constant	237.72** (80.8)
Observations	15019
$R^2$	0.79

Notes: Standard errors are clustered for repeated observations and reported in parentheses.  
This restriction removes 19 observations from the model.

\*  $p < 0.05$ , \*\*  $p < 0.01$

Y = these variables are included in the model. N = they are not included.

Web Appendix 11: Cultural practice predicts future incomes, including those who are own account workers in small firms and smaller employers

	Total gross labour income pay per month (£) in one years' time
<b>Covariates</b>	(1)
Usual gross pay per month (£)	0.64** (0.020)
Participate in an additional cultural practice	33.3** (5.37)
Socio-demographics (Model 5: Table 1)	Y
Region dummies	Y
Constant	304.74** (103.09)
Observations	17807
$R^2$	0.62

Notes: Standard errors are clustered for repeated observations and reported in parentheses.

\*  $p < 0.05$ , \*\*  $p < 0.01$

Y = these variables are included in the model. N = they are not included.

Web Appendix 12: Cultural practice predicts future incomes, including measures of cognitive ability, personality, and family background

	Total gross labour income pay per month (£) in one years' time
<b>Covariates</b>	(1)
Usual gross pay per month (£)	0.73** (0.025)
Participate in an additional cultural practice	17.89** (4.67)
Socio-demographics (Model 5: Table 1)	Y
Region dummies	Y
Cognitive ability	Y
Big-5 personality scores	Y
Family background	Y
Constant	-472.11 (198.55)
Observations	14438
$R^2$	0.74

Notes: Standard errors are clustered for repeated observations and reported in parentheses.

\*  $p < 0.05$ , \*\*  $p < 0.01$

Y = these variables are included in the model. N = they are not included.

Web Appendix 13: Cultural practice predicts future incomes, adjusting for an additional lag in income, using BHPS data

	Usual gross labour income pay per month (£) in two years' time
<b>Covariates</b>	(1)
Usual gross pay per month (£)	0.46** (0.10)
Usual gross pay per month (£) two years ago	0.22** (0.024)
Participate in an additional cultural practice	47.3** (12.6)
Socio-demographics (Model 5: Table 1)	Y
Region dummies	Y
Constant	444.7 (101.0)
Observations	22588
$R^2$	0.59

Notes: Standard errors are clustered for repeated observations and reported in parentheses. All models adjust for a linear time trend.

\*  $p < 0.05$ , \*\*  $p < 0.01$

Y = these variables are included in the model. N = they are not included.

Web Appendix 14: Cultural practice and the association with change in incomes, using BHPS data

	Usual gross labour income pay per month (£) in two years' time
<b>Covariates</b>	(1)
Participate in an additional cultural practice	19.00** (6.12)
Socio-demographics (Model 5: Table 1)	Y
Region dummies	Y
Constant	397.51 (35.37)
Observations	31356
$R^2$	0.011

Notes: Standard errors are clustered for repeated observations and reported in parentheses.

All models adjust for a linear time trend.

\*  $p < 0.05$ , \*\*  $p < 0.01$

Y = these variables are included in the model. N = they are not included.