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Revisiting Cultivation as a Gravitational Process: A Cross-National Comparison of the Cultivation of Fear and Mistrust

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Communication scholars have found varying levels of support for cultivation theory in the United States and abroad. Using a multilevel modeling approach and data from 27 countries (N > 51,000) from the fifth round of the European Social Survey, we found that the country in which a study is conducted explains a significant amount of the variance in violence-related outcome variables as well as in their relationship with television viewing. We further demonstrate how one cross-national contextual variable (welfare state regime) moderates cultivation relationships. For some of our outcomes, the relationships vary predictably across these groupings in a manner that strongly suggests mainstreaming. We propose that a macro-level approach would provide valuable insight into the complexities of cultivation theory.

Keywords: cultivation, mainstreaming, multilevel modeling, television, fear, European Social Survey

George Gerbner's cultivation theory has generated a great deal of work in the field of communication, addressing both its promises and limitations. Many scholars have advanced the theory in various ways (see Busselle & Van den Bulck, 2019, for an overview), some by addressing the psychological mechanisms of the theory (e.g., Shrum, 2004) and others by distinguishing different types of cultivation (e.g., Hawkins & Pingree, 1982). Although we should not understate these contributions, it is important to continue to explore the boundary conditions (see Busse, Kach, & Wagner, 2017) of cultivation theory by considering the impact of contextual variables. While there are a few notable works that apply this line of thinking to media effects research (Valkenburg & Peter, 2013) and cultivation theory (Coenen & Van den Bulck, 2016), there are relatively few studies approaching cultivation from this perspective.

In this study, we use cross-national data to demonstrate that national context matters when investigating cultivation. However, differences across nations do not necessarily mean that the relationship between television viewing and reality perceptions is nonexistent or that it is unique to the United States, as some have suggested (e.g., Wober & Gunter, 1988). We find that, after accounting for country-level variation, cultivation relationships tend to persist for two of the four variables we analyze. We further explore

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a cross-national contextual factor that may be relevant to classic cultivation outcomes: welfare state regime. Our findings show that for some of the outcomes, the relationships vary predictably across these groupings in a manner that strongly suggests mainstreaming.

The Macro-Level Origins of Cultivation Theory

George Gerbner (1969, 1973) first introduced cultivation theory as an association between storytelling and cultural beliefs, especially as it pertained to mass-produced storytelling within societies. Although Gerbner's use of the term *cultivation* predates his influential work on television viewing, it is generally recognized as a theory of the relationship between television viewing and perceptions of social reality. Gerbner referred to the dominant images portrayed across an entire media landscape as message systems that are driven by profit-based media institutions. He hypothesized that these message systems have an effect on how heavy consumers of television view the world such that their perceptions of reality are more reflective of the reality that is portrayed in the meta-narratives of television (Gerbner, 1969). This does not necessarily suggest that light or nonviewers of television are unaffected by the dominant cultural trends reflected in the media. Light and heavy viewers interact in the real world, so media effects can be transferred through social interaction, even among those with little exposure to the media's mainstream messages (e.g., Morgan & Signorielli, 1990). This is the mechanism that helps explain why, in Gerbner's view, the entire culture is affected in the long term. Gerbner's theory does, however, suggest that those more immersed in the messages may show a larger cultivation effect than those "living a more insulated life or in a more independent or diversified cultural context" (Gerbner & Gross, 1973, p. 2).

To establish and explain Gerbner's central claim, cultivation studies have largely relied on differences between heavy and light viewers of television. Many scholars have focused on individual effects and their mechanisms. For example, Hawkins and Pingree (1982) theoretically distinguish between the cultivation of probability-based judgments (first-order effects) and global judgments about the world (second-order effects), suggesting that cultivation goes beyond learning discrete "facts" and should also examine value-based beliefs. Shrum (2004) provides support that these two kinds of effects are governed by two distinct cognitive mechanisms: First-order effects are cultivated through heuristic processing, with television content reinforcing mental accessibility of certain perceptions of the world, whereas second-order effects are formed during viewing and impact more universal judgments. These studies have helped further specify and refine the theory.

However, Gerbner's cultural indicators approach was originally proposed as an alternative to the media effects research tradition of the time. Whereas this tradition mostly focused on a change of attitude or behavior as a result of specific message exposure, the cultural indicators project was focused on an entire system of messages, the institutions that produce them, and the impacts of message patterns on the cultivation of social reality perceptions. His proposed message systems analysis "illuminates not what any individual or group might see, but rather what is released into (and absorbed by) large communities over time" (Morgan, 2012, p. 61). In other words, he indicates an objective to observe macro-level effects emerging from the consumption of the dominant cultural messages over time as they relate to the perceptions and shared cultural understanding of large communities. We turn to cross-national comparison to see whether these changes can be observed at the macro level.

International Research and the Importance of Context

Although there is plenty of work that consistently finds cultivation relationships, particularly as they pertain to fear of victimization, many of these studies have focused exclusively on audiences in the United States (see Gerbner, 1998, for an overview of early work). Given that cultivation is described as a universal socializing effect of storytelling, it is important to conduct research across diverse contexts. As Livingston (2003) argues, "basing a project in one country generates claims whose specificity or generalizability are indeterminate without comparable projects in other countries" (p. 478). Although content produced in the United States is a large part of the TV diet in most countries across the world (Grece, Lange, Schneeberger, & Valais, 2015), this does not negate the need to study cultivation in other countries. From an active audience perspective, people from different cultures will have different immediate experiences to draw from and their interpretation of media content should not be assumed to be the same, as demonstrated early on by Ien Ang (1989) in a classic study on the global audiences of the TV show *Dallas*.

Cultivation studies conducted outside of the United States have been inconsistent: Some have found similar results to those in the United States and some have not (see Morgan & Shanahan, 1992). For example, Wober (1978) was not able to replicate the relationship between television viewing and two response items based on Gerbner's mean world index in the United Kingdom. Likewise, Kolbeins (2004) was unable to replicate it in the Icelandic context. This prompted some scholars to suggest that cultivation effects are specific to Americans' viewing of U.S. television, which was assumed to be more homogeneous and more violent than the collective system of messages available outside the United States (Blumler, Brynin, & Nossiter, 1986; von Feilitzen, Strand, Nowak, & Andren, 1989; Wober & Gunter, 1988).

However, there are many possible explanations for the inconsistencies found internationally; studies both inside and outside of the United States generally do not take into account potentially relevant differences between countries (Van den Bulck, 2012). Other socializing and contextual factors may work with or against these message systems to produce different outcomes. As Gerbner articulates,

> cultivation is not conceived as a unidirectional process but rather more like a gravitational process. The angle and direction of the "pull" depends on where groups of viewers and their styles of life are in reference to the center of gravity, the "mainstream" of the world of television. (Gerbner, Gross, Morgan, & Signorielli, 1986, p. 24)

We argue that the type of society individuals live in is a particularly relevant variable for some of the most classic cultivation questions (i.e., fear, trust in others, estimates of danger, etc.). These judgments are complex, and we cannot expect that political and cultural contexts (or other variables that may have a bearing on feelings of security and likelihood of encountering hardship) will not influence cultivation relationships. At the most basic level, the appearance and/or size of these relationships is likely to vary depending on the country in which the relationship is examined.

H1: The country participants live in will account for a significant amount of variance in the relationship between television viewing and classic cultivation outcomes.

Welfare State Regimes as a Contextual Factor

In the current study, we explored one contextual variable across European countries that may be relevant to cultivation of fear and risk perceptions: the welfare state regime (WSR) in that country. Works by Bonoli (1997), Cerami (2005), Esping-Andersen (1990), Ferrera (1996), and others document differences between WSRs across Europe. Although these scholars use somewhat different dimensions to form their classifications, they are ultimately similar in their breakdown (see Bambra, 2007). The WSR classifications are broadly based on social policy regarding welfare and health care; they include five different models: the Scandinavian or Nordic model, the Anglo-Saxon or Liberal model, the Bismarckian or Continental model, the Mediterranean or Southern model, and the relatively newly recognized Central/Eastern European model (Beblavy, 2008; Sengoku, 2003).[1]

While these WSRs share a number of similar goals, they differ in their political trajectories. Crucially, they differ in policies regarding income maintenance and allocation of social benefits (and, as a result, poverty levels in the country). Table 1 lists each WSR roughly in order of decreasing social protections offered by the government and increasing poverty rates.

Table 1. Welfare State Regimes.

Nordic/Scandinavian (Denmark, Finland, Norway, Sweden)
• Egalitarian, strong universalism (Bambra & Eikemo, 2009; Popova & Kozhevnikova, 2013; Richardson et al., 2019
• High employment and low poverty levels (European Association of Persons with Disabilities, n.d.)
Bismarckian/Continental (Belgium, Germany, France, the Netherlands, Switzerland)
• Generous unemployment benefits, earnings-related welfare program (Bambra & Eikemo, 2009)
• High employment and moderate poverty levels (Beblavy, 2008; Sengoku, 2003)
Liberal/Anglo-Saxon (Ireland, United Kingdom, Israel)
• High income dispersion, more low-wage employment (Casalegno, 2006)
• Means-tested welfare program (Bambra & Eikemo, 2009)
• High employment and moderate poverty levels (Beblavy, 2008; Sengoku, 2003)
Southern/Mediterranean (Cyprus, Spain, Greece)
• Limited/partial welfare coverage (Bambra & Eikemo, 2009)
• Low employment and high poverty levels (Beblavy, 2008; Sengoku, 2003)
Eastern/Postcommunist (Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Lithuania, Poland, Russia, Slovenia, Slovakia, Ukraine)
• Formerly communist countries of Eastern Europe (Bambra & Eikemo, 2009)
• Minimal state provision of welfare services (Richardson et al., 2019)
• Contribution- and employment-based social insurance systems (Sengoku, 2003)
• Low employment and high poverty levels (Beblavy, 2008; Sengoku, 2003)

[1] Note that this is an ongoing conversation and there is variation in the field regarding the categories that best capture different WSRs (see Bambra, 2007).

Three broad principles underpin provisions across the classifications. Countries higher in universalism offer provisions to all citizens as long as minimal criteria are met. Those under social insurance systems offer benefits to citizens based on past contributions and reflect the income earned by the individual. Finally, those countries under a means-testing system only offer (modest) provisions to citizens who have the highest need for assistance and have exhausted all other means of providing for themselves (Bambra & Eikemo, 2009; Diderichsen, 2002).

These social conditions can have implications for the levels of fear and trust felt by citizens within each WSR. Citizens of countries that do not offer much security or support for those experiencing hardship tend to feel a greater sense of fear and instability than citizens of countries that do offer such support (Vieno, Roccato, & Russo, 2013). The societal insecurity that may result has been linked to a general fear of crime (Hummelsheim, Hirtenlehner, Jackson, & Oberwittler 2011; Visser et al., 2013). Long-term unemployment is also a significant predictor of violent and property offenses (Aaltonen, Kivivuori, & Martikainen, 2011). These conditions would make it more likely that citizens of these countries will have direct experience with hardship and fear-inducing situations.

On the other hand, citizens living in a WSR that is higher in universalism (and thus offers more security and social protections) will likely feel relatively less fear and more trust in others. Not only do citizens in these countries have stronger safety nets that tend to lower the rates of poverty, but the reduction in poverty may also lead to a decrease in crime rates. Research has found that countries with more social protections tend to have lower homicide rates and a weaker relationship between economic inequality and lethal violence (Savolainen, 2000).

H2: WSRs will differ in classic cultivation outcomes whereby those that offer more social protections and have lower poverty rates will be associated with lower levels of fear and greater trust in others.

This variation puts citizens of different countries at different reference points in relation to the "mainstream" of television narratives. Gerbner's concept of mainstreaming theorizes that there is likely a stronger impact of television when the messages presented there are very different from a group's baseline perceptions. In Gerbner's words, "cultivation implies the steady entrenchment of mainstream orientations in most cases and the systematic but almost imperceptible modification of previous orientations in others" (Gerbner et al., 1986, p. 24). This leads to a convergence of viewpoints among heavy viewers toward those reflected in message systems on television.

H3: WSR will moderate the relationship between television viewing and classic cultivation outcomes whereby relationships will be stronger in WSRs with lower levels of fear and greater trust in others.

The Current Study

Data

The European Social Survey (ESS) is a collection of publicly available data sets[2] designed and collected by the European Science Foundation with the goal of providing high-quality data to study changing social attitudes in Europe. The ESS has many processes in place to ensure high-quality, accurate data including a multistep probabilistic sampling procedure. In addition, it offers weighting options for the most accurate representation of the population in each country, including design weights that correct for selection probabilities of individual respondents and population weights that account for having similar sample sizes despite differing population sizes across countries.

ESS data provide a distinct advantage when it comes to study standardization; care is taken to precisely translate each item, and participants in each country answer the same items so the measures are as similar as possible. This provides a rare opportunity to compare relationships across countries using the exact same questions and procedures. For our analysis, we drew from the fifth round of ESS data collection, conducted between 2009 and 2010 in 27 European countries.

We used the 2010 data set to maximize the number of countries included in the analysis. Internet streaming services were also not yet widely available in Europe in 2010 (e.g., Bury & Li, 2015; Grece et al., 2015). Audiovisual media markets were still dominated by linear television channels. Although cable and satellite allowed for a wider range of channels than just free-to-air broadcasting, viewing figures show that audiences, although dispersed, still flocked around the same limited number of channels and, importantly, consumed predominantly linear television (i.e., watching at the time of broadcast decided by the channels). Since 2010, we have seen a progressive move to a postlinear television experience, characterized by a mixed media diet of traditional linear channels and nonlinear services (e.g., video-on-demand and streaming services like Netflix), which has dispersed the audiences much more (Van den Bulck, Tambuyzer, & Simons, 2014). Using 2010 data allowed us to more reasonably make the assumption that people are generally being exposed to similar message systems through television viewing.

Welfare State Regime Classification

To categorize the available countries into WSRs, we started with Ferrera's (1996) classification containing four categories: Anglo-Saxon, Bismarckian, Scandinavian, and Southern. We added to this the more recently recognized category of the Eastern WSR based on the available literature (Eikemo, Huisman, Bambra, & Kunst 2008; Fenger, 2007). As previously noted, there is a large scholarly conversation around these categorizations and many different versions exist. We chose to use Ferrera's classification because it is generally regarded as the most accurate (Bambra, 2007), and supplemented that with the more recently recognized Eastern WSR to include as many of the countries available to us as possible (see Table 1).

[2] Downloadable at http://www.european socialsurvey.org/

Independent and Control Variables

As our independent variables, we used an estimate of the total amount of television watched on an average weekday ("On an average weekday, how much time, in total, do you spend watching television?") measured on a 0 to 7 scale where a score of 0 indicated *none at all* and a score of 7 indicated *more than three hours*. We included gender, age, and level of education (converted to 0–7 scale) as basic control variables.

Dependent Variables

The data contained variables that probed general fear of victimization ("How safe do you—or would you—feel walking alone in this area after dark?"), trust in other people (an index of three trust items, e.g., "Most people can be trusted"; Cronbach's alpha = .79) worry about violent crime ("How often do you worry about becoming a victim of violent crime?"), and worry about burglary ("How often, if at all, do you worry about your home being burgled?"). Similar items have been used in previous cultivation (e.g., Gerbner, Gross, Morgan, & Signorielli, 1980; Hughes, 1980; Signorielli, 1990; Sparks & Ogles, 1990; Uslaner, 1998) and noncultivation (e.g., Bilsky & Wetzels, 1997; Mesch, 2000) studies to measure these concepts. Although we chose them to be reflective of both first-and second-order cultivation outcomes, we refrained from using these categorizations in part because the phrasing of the ESS questions do not directly map on to what are considered first- and second-order cultivation. For example, although the items that capture worry about crime and burglary are likely based on an estimate of the frequency of these events in the real world, they do not directly ask respondents to estimate a frequency. In addition, there is disagreement on the clear distinction between second- and first-order cultivation (e.g., Schnauber & Meltzer, 2016).

Analysis

Due to the hierarchical nature of these data, multilevel modeling was ideal for our analysis. Hierarchical data violate the assumption of statistical independence of observation necessary for most conventional analysis techniques. An advantage of using multilevel modeling is that it allowed us to extract the relationship between two variables while taking into account the proportion of variance explained by the country level. That is, it could account for the variance that individuals within each country share by virtue of being part of that country's population, reducing the probability of false positives due to the relatedness of the populations. Thus, we were able to disentangle the influence of individual characteristics from that of higher-level units while also measuring the extent to which the higher-level variable accounted for differences in the outcome variable and the relationship of interest.

We first present illustrative correlational bar graphs to demonstrate the varying relationships between television viewing and classic cultivation variables across countries. We then present our linear mixed models. We used R (R Core Team, 2019) and lme4 (Bates, Maechler, Bolker, & Walker, 2015) to perform our analyses. For each outcome of interest, we used a model specifying a random intercept for each country and a random slope for television viewing to examine the impact of television after taking into account variance across countries in the relationship between television viewing and the outcome variable (accounted for by specifying a random slope), as well as variance across countries in the intercept of these models (accounted for by specifying a random intercept).

Intraclass correlation coefficients (ICC) indicate the amount of variance explained by the random components and are generally calculated by dividing the random effect variance by the total variance in the model. Our ICCs were calculated by the sjPlot package in R (Lüdecke, 2020). They were estimated based on the conditional models (i.e., the full models that include the covariates) and adjusted for the correlation between the random effects.

Next, we present the same models with WSR entered as a moderator. To examine differences between WSRs, we used reverse Helmert contrast coding (Sundström, 2010). We provide illustrative line graphs demonstrating how the relationships between television and our outcomes are moderated by WSR.

Design and population weights were applied and scaled to sum to the country sample size based on suggestions summarized in Carle (2009). Because the overall percentage of missing data was low (less than 2% for each outcome; see the Appendix), we used pairwise deletion (Newman, 2014). The pattern of results was the same using listwise deletion. In each case, this led to a sample of at least 51,000 participants. See the Appendix for demographics and sample sizes across WSRs. All regression coefficients presented are unstandardized.

Results

An initial look at the correlations between television viewing and each outcome can be seen in Figure 1. In all cases, the country appears to make a difference in whether or not a cultivation outcome was found and its intensity. The correlations with fear and trust mostly vary in intensity, and the correlations with worry about crime or burglary also vary in direction.

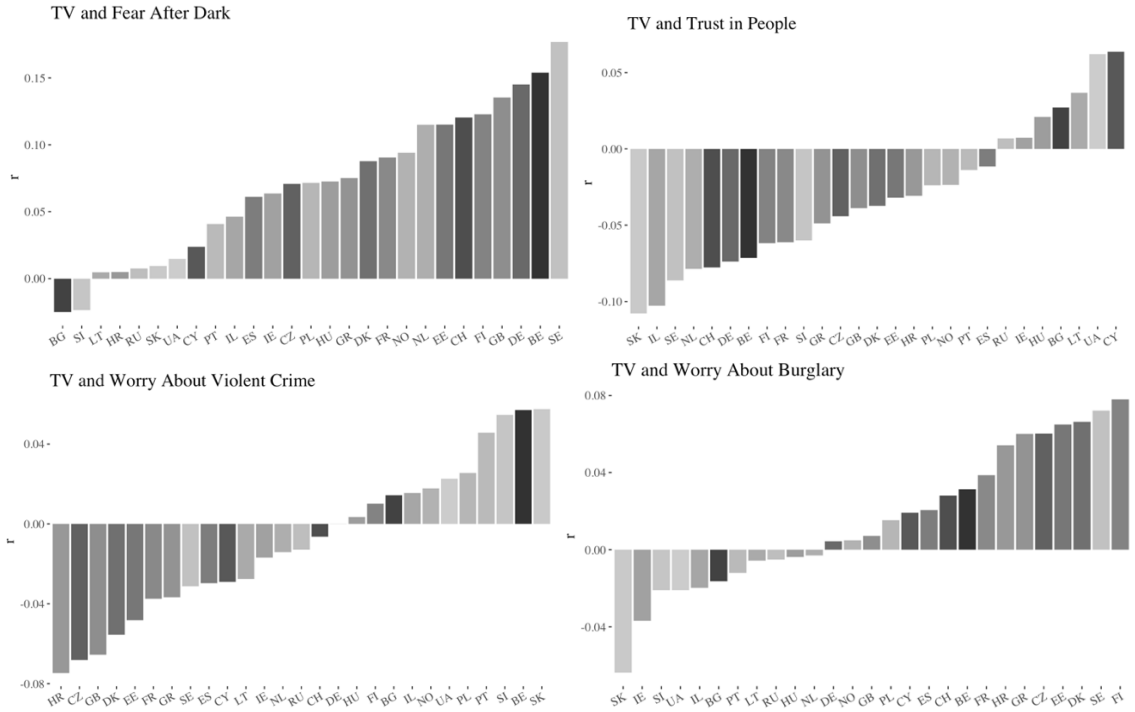

Figure 1. Pearson correlations between television use and cultivation outcomes.

Country

Turning to our multilevel analysis, we start with mixed effects models containing a random intercept for country and fixed effects for television and key demographic variables. Adding a random slope for television viewing to our random intercept model with fear after dark as the outcome significantly improved the fit of the model, indicating that the relationship showed significant variance in slopes across countries, $\chi^2(2) = 95.39$, $p < .001$. The ICC indicates that the country one lives in explained 10% of the variance in reported fear after dark beyond what was accounted for by the fixed components in the model. The same was true of trust in other people: Adding a random slope for television viewing significantly improved the model, indicating that the relationship varied significantly across countries, $\chi^2(2) = 7.17$, $p < .05$. The ICC indicates that 19% of the variance in trust in other people is due to country-level variation. These models provide support for Hypothesis 1.

Adding a random slope for television viewing to a random intercept model containing worry about violent crime as the outcome significantly improved the fit, $\chi^2(2) = 21.76$, $p < .001$, indicating, again, that the relationship showed significant variance in slopes across countries, providing further support for Hypothesis 1. The ICC reveals that the country level accounted for 8% of the variance in this outcome. Finally, adding a random slope for television viewing to the random intercept model containing estimations of burglary as an outcome did not improve the fit, $\chi^2(2) = 5.76$, $p = .06$, which did not support Hypothesis 1. The ICC indicates that the county level accounted for 9% of the variance in this outcome.

After accounting for variation at the country level as well as controlling for key demographics, Table 2 shows that watching television was significantly associated with increased fear after dark (b = .02, p < .001) and decreased trust in the average country (b = −.03, p < .001), but not with worry about violent crime or burglary in an average country.

Table 2. Multilevel Model Estimates With Random Effects for Country and Television Viewing.

Variable	Fear after dark	Trust in others	Worry about crime	Worry about burglary
Predictor				
(Intercept)	1.689***	4.737***	1.639***	1.611***
Female	0.359***	0.122***	0.224***	0.140***
Television	0.017***	−0.027***	0.005	0.003
Education	−0.018***	0.068***	−0.002	0.019***
Age	0.003***	0.002***	−0.001***	0.004***
Random effects				
Residual (σ^2)	0.58	3.08	0.61	0.73
Intercept variance (τ_{00})	$0.09_{country}$	$0.78_{country}$	$0.05_{country}$	$0.06_{country}$
Slope variance (τ_{11})	$0.00_{country.tvtotal}$	$0.00_{country.tvtotal}$	$0.00_{country.tvtot}$	$0.00_{country.tvtotal}$
Correlation (ρ_{01})	$-.76_{country}$	$-.43_{country}$	$-.15_{country}$	$.30_{country}$
Intraclass correlation coefficient	.10	.19	.08	.09
N	$27_{country}$	$27_{country}$	$27_{country}$	$27_{country}$
Observations	51,286	51,091	51,262	51,507
Marginal R^2/conditional R^2	.059/.153	.006/.197	.019/.097	.014/.099
Log-likelihood	−76319.483	−118485.645	−77426.939	−82515.675

*p < .05. **p < .01. ***p < .001.

Welfare State Regime

In Table 3, we present the mixed-effects models with WSR as a moderator. To compare WSRs, we used reverse Helmert contrast coding. This allowed us to compare each group mean with the mean of the previous group(s) combined. We first compared the Southern WSR with the Eastern (wsr1); then the Anglo-Saxon with the mean of the Southern and Eastern (wsr2); then the Bismarckian with the mean of the Southern, Eastern, and Anglo-Saxon (wsr3); and finally, the Scandinavian with the mean of the other four WSRs (wsr4). This reflects the order in which we expected WSRs to decrease in mean levels of fear, distrust, and encounters with crime. The significance of the interactions between television viewing and the WSR comparisons indicates whether the slope of the relationship between television and the cultivation outcome differed significantly for those comparisons.

Table 3. Multilevel Model Estimates With Random Effects for Country and Television Viewing.

Variable	Fear after dark	Trust in others	Worry about crime	Worry about burglary
Predictor				
(Intercept)	1.623***	4.928***	1.633***	1.632***
Female	0.359***	0.122***	0.224***	0.140***
Television	0.020***	−0.028***	0.007*	0.005*
Education	−0.018***	0.068***	−0.002	0.019***
Age	0.003***	0.002***	−0.001***	0.004***
wsr1	−0.037	−0.106	0.110	0.217***
wsr2	−0.111 **	0.375***	−0.087	−0.057
wsr3	−0.055 *	0.207***	−0.012	−0.030
wsr4	−0.085***	0.323***	−0.021	−0.047*
TV : wsr1	0.004	0.002	0.003	0.006
TV : wsr2	0.008***	−0.006	0.004	−0.001
TV : wsr3	0.005***	−0.008**	−0.001	−0.000
TV : wsr4	0.004**	−0.002	0.000	0.003**
Random effects				
Residual (σ^2)	0.58	3.08	0.61	0.73
Intercept variance (τ_{00})	$0.04_{country}$	$0.13_{country}$	$0.04_{country}$	$0.04_{country}$
Slope variance (τ_{11})	$0.00_{country.tvtotal}$	$0.00_{country.tvtotal}$	$0.00_{country.tvtotal}$	$0.00_{country.tvtotal}$
Correlation (ρ_{01})	$-.06_{country}$	$-.27_{country}$	$-0.05_{country}$	$-.09_{country}$
Intraclass correlation coefficient	.06	.05	.06	.05
N	$27_{country}$	$27_{country}$	$27_{country}$	$27_{country}$
Observations	51,286	51,091	51,262	51,507
Marginal R^2/conditional R^2	.104/.156	.153/NA	.035/.097	.047/.100
Log-likelihood	−76303.877	−118457.323	−77423.101	−82503.692

Note. wsr1 = Southern welfare state regime (WSR) compared with the Eastern WSR; wsr2 = Anglo-Saxon WSR compared with the mean of the Southern and Eastern WSRs; wsr3 = Bismarckian WSR compared with the mean of the Southern, Eastern, and Anglo-Saxon WSRs; wsr4 = Scandinavian WSR compared with the mean of the other four WSRs.
*p < .05. **p < .01. ***p < .001.

Wsr1 shows that the Southern WSR did not differ significantly from the Eastern for any outcomes except worry about burglary (b = .22, p < .001). Wsr2 shows that the Anglo-Saxon WSR did not differ significantly from the mean of Southern and Eastern WSRs on worry about crime or burglary, but did differ significantly for both fear after dark (b = −.11, p < .01) and trust in others (b = .38, p < .001) such that people living in an Anglo-Saxon WSR tended to report less fear and more trust than those in Southern and Eastern WSRs. Similarly, wsr3 shows that the Bismarckian WSR did not differ from the mean of the previous three on worry about crime or burglary, but it did differ significantly on fear after dark (b = −.06, p < .05) and trust in others (b = .21, p < .001) such that people who live in a Bismarckian WSR reported somewhat lower levels of fear after dark and higher levels of trust than those in Eastern, Southern, and Anglo-Saxon WSRs combined. Finally, wsr4 shows that the Scandinavian WSR significantly differed from the mean of the other four for fear after dark (b = −.09, p < .001), trust in others (b = .32, p < .001), and worry about burglary (b

= −.05, $p < .05$), but not for worry about violent crime. These findings provide some support for Hypothesis 2.

The interactions between television and each of these comparisons reveal that the Eastern and Southern WSRs did not differ in the relationship between television and any of the four outcomes. The Anglo-Saxon WSR shows a significantly stronger association between television and fear ($b = .01$, $p < .001$) compared with the Eastern and Southern WSRs. The Bismarckian WSR differs from the previous three on the relationship between television and fear after dark ($b = .01$, $p < .001$) and trust ($b = -.01$, $p < .01$) such that there was a stronger positive relationship in the Bismarckian WSR for fear, and a stronger negative relationship for trust. Finally, the Scandinavian WSR shows a stronger positive relationship between television and both fear after dark ($b = .004$, $p < .01$) and worry about burglary ($b = .003$, $p < .01$) than the other four combined. No significant difference was found for trust in others and worry about crime. These results partially support Hypothesis 3 and are suggestive of a mainstreaming pattern (see Figures 2–4).

Accounting for these relationships, television viewing was, on average, positively associated with fear after dark ($b = .02$, $p < .001$) and worry about burglary ($b = .01$, $p < .05$), and negatively associated with trust in others ($b = -.03$, $p < .001$). Interestingly, television viewing also appears to be significantly associated with worry about violent crime ($b = .01$, $p < .05$) after WSR relationships were entered. However, although it did for the other three outcomes, adding an interaction between WSR and television did not significantly improve this model, $\chi^2(8) = 7.68$, $p > .05$.

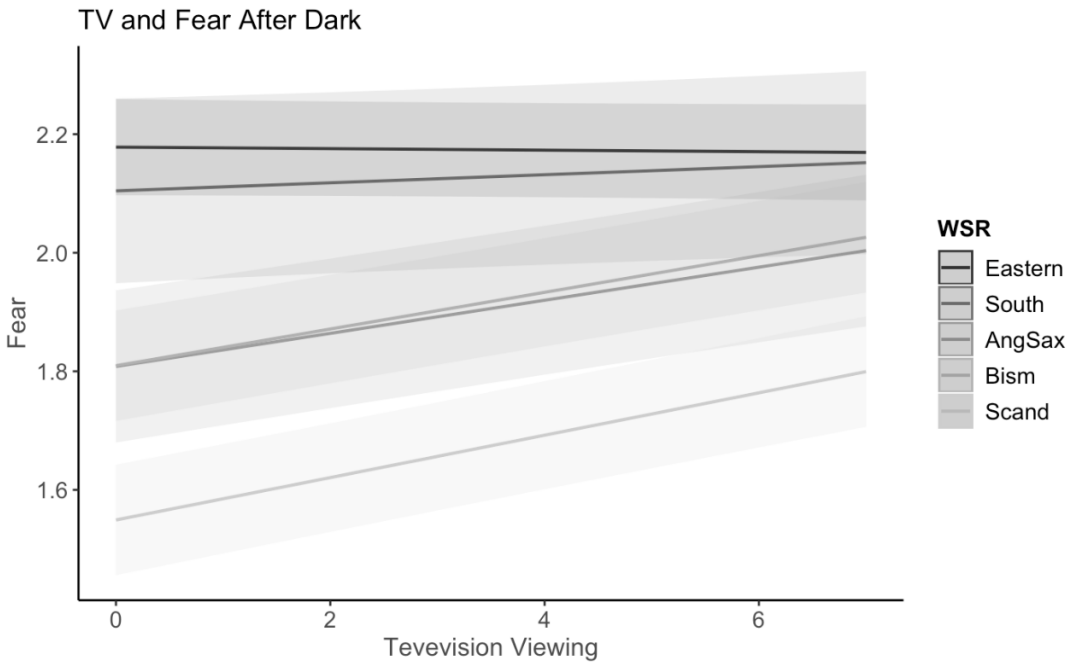

Figure 2. The relationship between television and fear after dark across welfare state regimes (WSRs).

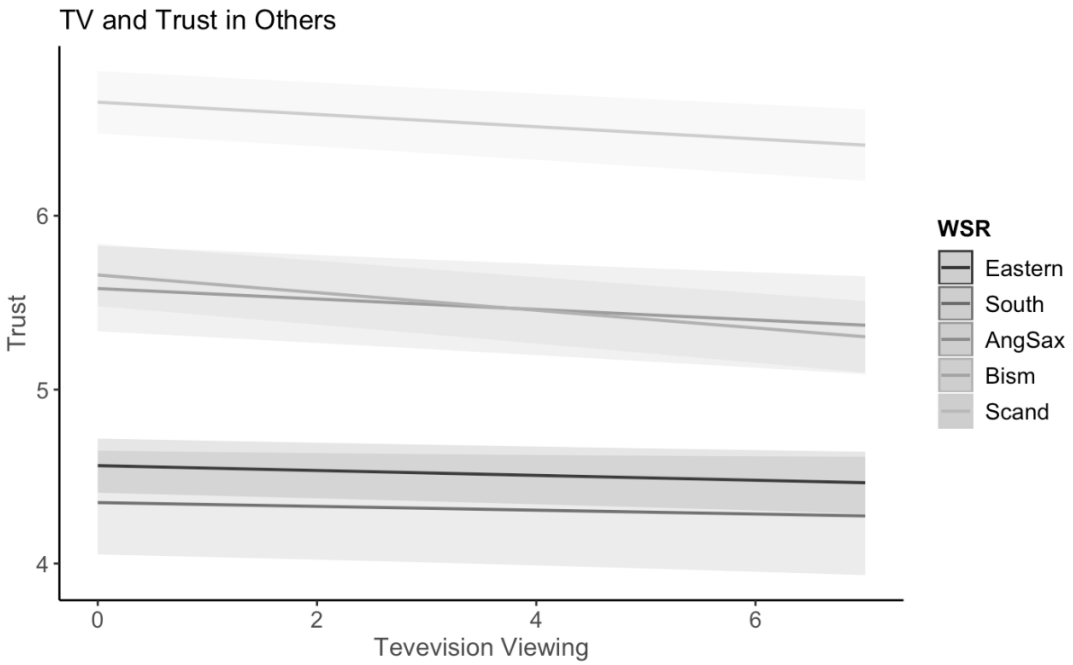

Figure 3. The relationship between television and trust in others across welfare state regimes (WSRs).

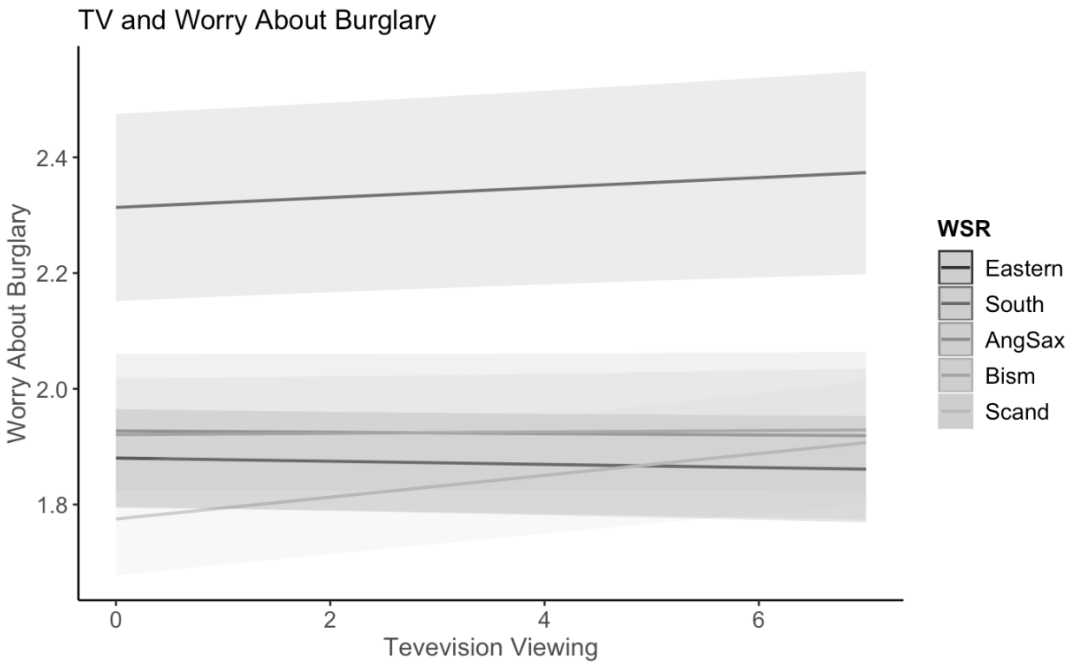

Figure 4. The relationship between television and worry about burglary across welfare state regimes (WSRs).

Discussion

Our results indicate that sociopolitical or cultural contexts are important to consider when testing cultivation relationships. An initial look at the correlations between television viewing and our outcome variables showed that relationship strength depends on where the study is conducted. Although the correlations with these variables mostly varied in intensity, the correlations with worry about violent crime and burglary also varied in direction. In addition, adding a random slope significantly improved the fit of all but one (worry about burglary) of our linear mixed models, indicating that the size of three of the relationships varied significantly across countries. After taking into account cross-country variance, we found significant relationships between TV and fear after dark as well as trust in others, but not for worry about violent crime or burglary. These findings suggest that the first two variables may have more international applicability than the second two. One explanation for this is that the worry-based questions were too reliant on local surroundings to be strongly associated with media depictions, especially if those media are set in an international context. For example, if I live in Belgium but watch mostly television that is produced in the United States, I may believe that there are large numbers of police officers in the United States, but my beliefs about my local community may not be affected (e.g., Bilandzic, 2006). A general sense of fear or trust in others, on the other hand, may rely on judgments about people in general and what they are capable of.

We further demonstrated that a larger contextual feature of these countries, their welfare state regime, not only accounted for differences in the outcomes being measured, but was also associated with differential relationships between these outcomes and television viewing. We found that reported fear did not vary significantly between the Southern and Eastern WSRs, but the Anglo-Saxon, Bismarckian, and Scandinavian WSRs all reported significantly lower levels of fear after dark. Compared with the others, Southern and Eastern WSRs tend to have higher levels of poverty and unemployment. These conditions likely create a local context that inspires more fear and less trust in others.

In addition to the highest levels of reported fear in these two WSRs, we also found the weakest association between television and reported fear. It is possible that being fearful of walking around after dark hit its peak because of the context. In that case, more viewing will not necessarily lead to more effect: One can notice other or new facts, but one cannot learn more of the same (e.g., Potter, 1993). On the other hand, countries with relatively lower poverty rates and more consistent state provisions showed a stronger relationship between television and reported fear, with Bismarckian and Scandinavian WSRs showing the strongest relationship followed by the Anglo-Saxon WSR. This pattern is consistent with the idea of mainstreaming, which contends that cultivation relationships may be more pronounced for those "out of the mainstream" (Gerbner et al., 1980, p. 15). People living in contexts that are most inconsistent with the fear-inducing message systems of television appear to be the most strongly affected by them, ultimately leading heavy viewers to have a more similar perception of reality than lighter viewers.

The trend found for the relationship between television viewing and reported fear was not quite as pronounced for reported trust in others. The main effect of WSR on trust varied substantially in a similar manner to fear: Anglo-Saxon, Bismarckian, and Scandinavian WSRs reported significantly higher trust in others than the Eastern and Southern categories. This is consistent with the aforementioned differences in state-level safety nets available in these regimes. We found that Eastern, Southern, and Anglo-Saxon WSRs did not differ significantly in the relationship between television and trust. However, the Bismarckian WSR showed a stronger negative relationship between television and trust than the mean of the previous three, which indicates differential relationships across WSRs. Trust in others also appeared to converge among heavier viewers across WSRs in the direction of decreased trust, albeit less obviously so than reported fear after dark.

Similar to its relationship with trust in others, the relationship between television viewing and worry about one's home being burgled displayed a less pronounced version of the mainstreaming pattern. Those in Southern WSRs reported higher levels of worry about burglary, and those in Scandinavian WSRs reported lower levels of worry about burglary than the other WSRs combined. Consistent with the mainstreaming hypothesis, the relationship between television and estimates of burglary was stronger for those in Scandinavian WSRs compared with the others. However, there was no significant difference between the Eastern and Southern WSRs in the relationship between television and worry about burglary despite the significant difference in worry about burglary.

Unlike the other outcomes, worry about being the victim of a violent crime did not appear to differ substantially across countries or WSRs. Consistent with what we would expect, we also did not see significant differences in the relationship between television viewing and worry about violent crime across WSRs. Given that mainstreaming requires a difference in starting point, this is not necessarily evidence against it. The

relative stability of this relationship across WSRs is interesting when contrasted with the Pearson correlations by country in Figure 1. It is clear that the strength of this relationship did vary by country, but it appears that WSR was not a relevant moderator for this particular outcome.

Surprisingly, cultivation relationships for each of these outcomes were significant after entering WSRs into the multilevel model. It is possible that accounting for more unexplained variance by adding WSR and its interaction with TV allowed for the detection of the weaker associations, especially for worry about burglary. Although this is a post hoc explanation, it suggests that for some cultivation outcomes, a relationship might be uncovered if one or more relevant contextual variables are taken into account. Although worry about crime also became significantly associated with television after adding WSR, the addition of the moderator did not improve the model by more than what we would expect by chance. Therefore, we refrain from speculating further about the emergence of this relationship.

We should note here that the effect sizes reported are small and not easily interpreted based on the scales used in the survey. Although we believe our findings are important, and our effect sizes are not unusually small compared with those of other cultivation studies (e.g., Morgan & Shanahan, 1992), we want to be cautious not to overinterpret our results. On the one hand, the small effect sizes indicate that television does not seem to be a particularly large contributor to these outcomes on its own. This is not surprising considering all of the other factors that go into the outcomes we typically measure. On the other hand, small effects sizes can still indicate meaningful relationships at scale. As Morgan and Shanahan (1997) argue, "a difference of a few points often signals a landslide, a market takeover, or an epidemic, and it certainly tips the scale of any closely balanced choice, vote, or other decision" (p. 34).

Overall, our findings show that living in different WSRs produces different degrees of reported fear and trust in others (and, to a lesser extent, worry about burglary). As a result, the emergence and strength of cultivation relationships also differ across these groupings, leading to a convergence of perceptions of heavier television viewers compared with lighter television viewers in a manner that strongly suggests mainstreaming. Although cultivation is posited as a universal theory (i.e., the socializing effect of television should apply across contexts), different contextual forces may pull particular outcomes in varying directions, making it appear as if cultivation is not at work when it may just be overpowered by other explanatory factors (e.g., Gerbner & Gross, 1976). Alternatively, cultivation theory may be limited in contexts where aspects of the television world do not stand out as particularly different or more striking than the immediate surroundings or experiences of the people there.

Limitations and Future Directions

There are a few limitations to the current study. First, despite all of the advantages of the data collected by the ESS, one limitation to secondary data analysis is that we had no control over the measurements and were limited to the variables that were included in the data collection effort. As a result, three of our four outcome variables as well as our television viewing variable were measured based on a single item, making these variables more vulnerable to measurement error. In addition, television viewing was measured on a 7-point scale, with the highest value indicating three or more hours a day, which did

not capture differences above three hours of television viewing per day. Another limitation of the data set is that we were restricted to working with only European countries.

Second, we used WSR categorization as an indication of levels of crime and social insecurity in real-world contexts. Although we had good justification for doing this, a more direct measure of these concepts may have provided better support for our argument. Third, there is disagreement in the field regarding WSR categories. Although we used a consistent method of country categorization based on one of the most respected classifications, it remains that the way that we categorized the countries in this data set is not the only accepted way to do so.

Fourth, media industries and media content vary across countries. Data from the European Audiovisual Observatory (2010), which has been monitoring the European audiovisual landscape since 1992, show that countries differ in the extent to which they draw on particular audiovisual industries. Although it is safe to claim, for instance, that much of the content that American viewers are exposed to is also shown across Europe (as it is across the world), there are considerable differences between countries and broadcasting cultures (De Bens & de Smaele, 2001). One factor to consider, which we were not able to measure in this study, is the extent to which the television content in particular countries is directly relevant to the reality perceptions of their citizens. Bilandzic (2006) argues that whether or not a viewer has direct experience with the situations and events being depicted on screen has implications for how the content is processed, stored, and integrated into one's beliefs about social reality. Whereas people in the United States are likely exposed to culturally congruent content (i.e., content produced and set in the United States), in other countries there may be a mix of locally and internationally produced content that is widely available.

Notwithstanding these limitations, our study offers a starting point for thinking about cultivation effects at the macro level and incorporating contextual variables into future research. We focus on welfare state regimes in our demonstration, but there are, of course, a host of other contextual variables that may be relevant for cultivation research in any setting, and especially when comparing across nations. For instance, media content offerings are affected by the size of the market and the vicinity of a dominant media market (Lowe & Nissen, 2011), the availability and dominance of national (local) and transnational media (O'Connell, 2015), the presence and dominance of public service media (Van den Bulck, d'Haenens, & Raats, 2018), the level of digitization and its impact on convergence, and algorithm-based personalization-oriented streaming and on-demand services (Van den Bulck, Donders, & Lowe, 2018). Countries can show individual differences in some respects or can be grouped into systems based on other variables such as WSRs (Hallin & Mancini, 2004), as in the Nordic media welfare states (Syvertsen, Enli, Mjøs, & Moe, 2014). Future work should continue to explore the implications of these variables for cultivation theory.

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Appendix: Sample Demographics and Missing Data Across WSRs

Variable	Anglo-Saxon (*n* = 7,292)	Bismarckian (*n* = 9,798)	Eastern (*n* = 21,036)	Scandinavian (*n* = 6,499)	Southern (*n* = 7,833)	Overall (*N* = 5,2458)
Age (years)						
Mean (*SD*)	47.2 (19.2)	48.3 (18.4)	49.0 (18.7)	48.1 (18.9)	49.0 (19.0)	48.5 (18.8)
Median [min, max]	46.0 [15.0, 101]	48.0 [14.0, 97.0]	50.0 [15.0, 102]	48.0 [15.0, 99.0]	48.0 [15.0, 96.0]	48.0 [14.0, 102]
Missing, *n* (%)	34 (0.5)	9 (0.1)	98 (0.5)	0 (0)	12 (0.2)	153 (0.3)
Gender (female)						
Mean	0.549	0.512	0.572	0.501	0.558	0.546
Missing, *n* (%)	0 (0)	0 (0)	13 (0.1)	0 (0)	8 (0.1)	21 (0.0)
Education						
Mean (*SD*)	3.67 (1.90)	3.73 (1.81)	4.00 (1.71)	3.99 (1.88)	3.02 (2.01)	3.76 (1.86)
Median [min, max]	4.00 [1.00, 7.00]	3.00 [1.00, 7.00]	4.00 [1.00, 7.00]	4.00 [1.00, 7.00]	2.00 [1.00, 7.00]	4.00 [1.00, 7.00]
Missing, *n* (%)	150 (2.1)	28 (0.3)	54 (0.3)	24 (0.4)	4 (0.1)	260 (0.5)
Fear						
Mean (*SD*)	1.96 (0.806)	1.95 (0.771)	2.20 (0.780)	1.68 (0.735)	2.23 (0.858)	2.06 (0.810)
Median [min, max]	2.00 [1.00, 4.00]	2.00 [1.00, 4.00]	2.00 [1.00, 4.00]	2.00 [1.00, 4.00]	2.00 [1.00, 4.00]	2.00 [1.00, 4.00]
Missing, *n* (%)	67 (0.9)	51 (0.5)	485 (2.3)	23 (0.4)	25 (0.3)	651 (1.2)
Trust						
Mean (*SD*)	5.40 (1.80)	5.40 (1.67)	4.48 (2.05)	6.51 (1.49)	4.22 (1.86)	5.00 (2.00)
Median [min, max]	5.67 [0.00, 10.0]	5.67 [0.00, 10.0]	4.67 [0.00, 10.0]	6.67 [0.00, 10.0]	4.33 [0.00, 10.0]	5.00 [0.00, 10.0]
Missing, *n* (%)	144 (2.0)	37 (0.4)	550 (2.6)	39 (0.6)	85 (1.1)	855 (1.6)
Worry burgled						
Mean (*SD*)	1.91 (0.940)	1.90 (0.908)	1.90 (0.887)	1.86 (0.810)	2.39 (1.04)	1.97 (0.932)
Median [min, max]	2.00 [1.00, 4.00]	2.00 [1.00, 4.00]	2.00 [1.00, 4.00]	2.00 [1.00, 4.00]	2.00 [1.00, 4.00]	2.00 [1.00, 4.00]
Missing, *n* (%)	20 (0.3)	11 (0.1)	383 (1.8)	3 (0.0)	14 (0.2)	431 (0.8)

Worry crime						
Mean (*SD*)	1.65 (0.813)	1.70 (0.820)	1.76 (0.823)	1.65 (0.707)	2.04 (0.988)	1.76 (0.844)
Median [min, max]	1.00 [1.00, 4.00]	1.00 [1.00, 4.00]	2.00 [1.00, 4.00]	2.00 [1.00, 4.00]	2.00 [1.00, 4.00]	2.00 [1.00, 4.00]
Missing, *n* (%)	90 (1.2)	25 (0.3)	538 (2.6)	3 (0.0)	25 (0.3)	681 (1.3)