# From Cultivation to Self-Cultivation: Alternative Media and Reinforcing Spirals in a Fragmented Media Environment

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Media environments have changed rapidly since cultivation theory was proposed in the 1960s. This study analyzes whether growing opportunities for media choice reinforce and polarize public perceptions of crime development. This is done by synthesizing cultivation theory with the reinforcing spirals model. The study relies on a combination of a quantitative media content analysis ($N = 904$) and a three-wave panel survey ($N = 1,508$) conducted in Sweden. The findings suggest that there are significant differences between violent crimes news content in alternative media and traditional media and that there are reinforcing effects between alternative news orientation and crime perceptions but not between traditional news media use and crime perceptions. We propose self-cultivation as a new concept that can be used to understand cultivation processes in today's high-choice media environment.

*Keywords: cultivation, reinforcing spirals model, media effects, crime perceptions, mean-world syndrome*

Media environments have changed rapidly during the last few decades. One of the most significant changes is the enormous increase in choice opportunities. Today, people can pick and choose from an endless amount of content at any given time or place (Graber & Dunaway, 2018). The surge of alternative media is another recent development that has given the media landscape new conditions and individuals increased choices (Holt, Ustad Figenschou, & Frischlich, 2019). This development has raised concerns regarding audience fragmentation with people increasingly self-selecting content in accordance with their political predispositions (Slater, 2014; Stroud, 2010). This may, in turn, have implications for their perceptions of society and, in the long run, lead to more extreme attitudes and polarized societies (Dahlgren, Shehata, & Strömbäck, 2019; Feldman, Myers, Hmielowski, & Leiserowitz, 2014). Adding the surge of alternative media into the equation, the potential of attitudinal polarization increases even more (Holt, 2018).

One societal issue that has become increasingly politically contested in Sweden is crime development. The key issue concerns whether crime rates develop in a positive or negative way (Danielsson,

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2020; Lindström, 2020). Simultaneously, Swedish citizens are becoming increasingly worried about crimes. The share of people with great concern about crime in society has increased steadily since 2011. In 2019, 43% of the Swedish population was very concerned about crime in society (Brottsförebyggande rådet, 2019). Moreover, according to the 2021 national Society, Opinion and Media (SOM) survey, law and order have become an increasingly important societal problem among Swedish citizens (Martinsson & Andersson, 2021).

Understanding citizens' crime perceptions is important for several reasons. On the individual level, perceptions of crime may affect people's fear of crime (mean-world syndrome) and in the long run, behavior. The mean-world syndrome suggests that by being consistently exposed to violent crimes in the media, real-world perceptions of the prevalence of crime can become biased, and with biased real-world perceptions, fear and anxieties about crime might increase (Morgan, Shanahan, & Signorielli, 2012).

Cultivation has long been the main media effects theory relating to how crime perceptions are formed and reinforced. Cultivation theory suggests that people's perceptions of violent crimes are cultivated over time by the dominant and consistent messages provided by mass media—including news coverage (Morgan & Shanahan, 1997; Shanahan, 2009). An important question, however, concerns the relevance of cultivation theory in today's high-choice media environment. As media choices increase at an unprecedented pace (Graber & Dunaway, 2018), with a surge of alternative news websites (Ihlebæk & Nygaard, 2021), the applicability of broad cultivation processes among the general public becomes questionable (Bryant, 1986; Morgan, Shanahan, & Signorielli, 2015). To incorporate greater audience selectivity, better allow for human agency in news choices, and, thereby, differential susceptibility to cultivation effects (Shehata et al., 2021; Valkenburg & Peter, 2013), this study synthesizes cultivation theory with Slater's (2007) reinforcing spirals model (RSM). While RSM shares similarities with cultivation theory in terms of a focus on long-term reinforcement of beliefs through repeated exposure to dominant messages (Perse & Lambe, 2017; Slater, 2014), it accounts for audience selectivity as part of the media effects process. Combining cultivation and RSM will, thus, provide a better understanding of how growing media selectivity influences the long-term cultivation of crime perceptions.

Empirically, the study relies on a combination of a quantitative media content analysis of both traditional and alternative news media ($N$ = 904) and a three-wave panel survey ($N$ = 1,508) conducted in Sweden. This enables a comparison of how different news sources cover violent crimes with how crime perceptions develop among citizens over time. In terms of structure, we depart from cultivation theory as it has been widely used to conceptualize long-term media effects on crime perceptions. This is followed by a discussion on the limitations of cultivation theory in contemporary media environments and the role of human agency in media choices. We then introduce the RSM to provide a better understanding of how media selectivity increasingly conditions the cultivation of crime perceptions. The theory section concludes with an elaboration on how alternative media and alternative news orientation relate to the RSM. A number of hypotheses are outlined before presenting the Swedish case, data, and methods. Finally, we present the results and discuss implications, limitations, and directions for future research.

**Literature Review**

Traditionally, research on media use and crime perceptions has relied heavily on cultivation theory (Morgan, Shanahan, & Signorielli, 2015; Potter, 2014). As such, any study on the relationship between crime perceptions and media cannot ignore cultivation theory and the large media effects literature on cultivation effects. At the same time, there is a significant gap in this literature with respect to the relationship between *selective media use* and crime perceptions. Cultivation research has also focused primarily on traditional media (Morgan, Shanahan, & Signorielli, 2012; Shrum, 2017), paying less attention to *alternative media* for people's crime perceptions. The fact that cultivation research has almost exclusively relied on cross-sectional data, which do not capture the dynamic nature of the processes in which perceptions are formed and reinforced, is also a major limitation (Potter, 2014; Shi, Roche, & McKenna, 2019).

*Cultivation Theory*

The basic idea of cultivation theory is that repeated exposure to television cultivates perceptions about the world in line with the messages frequently conveyed by the medium. In other words, individuals who watch television frequently will perceive and think of the world similarly to how reality is portrayed on television. By influencing individuals' perceptions, television also influences how people shape their attitudes, values, and beliefs (Gerbner, Gross, Morgan, & Signorielli, 1986). The initial focus of cultivation research was the media's portrayal of violence and how repeated exposure to such portrayals influences people's perceptions (and associated behaviors) of violent crimes in the "real world." According to the so-called "mean-world syndrome," people who watch a lot of television would be more likely to believe that the world is much more dangerous and violent than it actually is. With biased real-world perceptions, fear and anxieties about crime were also hypothesized to increase (Jamieson & Romer, 2017; Shanahan, 2009).

A central distinction within cultivation theory is first- and second-order cultivation effects (Hawkins & Pingree, 1982). First-order cultivation effects are individuals' beliefs about the world in general. This is measured through people's quantitative estimation of, for example, the frequency of violent crimes or how crime trends have developed (Schnauber & Meltzer, 2015). Second-order cultivation effects concern individuals' attitudes, beliefs, and value judgments (Jamieson & Romer, 2017) that are "supposedly inferred by viewers from first-order information" (Potter, 1991, p. 92). In cultivation research on crime perceptions, a common dependent variable is "fear of crime." "Fear of crime" has been conceptualized in many different ways and included both first- and second-order effects. Some have conceptualized fear of crime as "people's perceptions of the amount of violence in society" (Morgan & Shanahan, 2010, p. 343), which is a first-order effect. Others have examined "perceived personal risk" or "the personal degree of fear of being victimized" (Morgan & Shanahan, 2010, p. 343), which are second-order effects. These measures are not necessarily related, which can be exemplified by the fact that a person who overestimates the frequency of crimes does not necessarily perceive the personal risk of being victimized by crime as higher. Morgan and Shanahan (2010) suggest that

> television is more likely to teach us societal-level lessons about what "the world" is like,
> but not necessarily impact our perceptions of our own personal reality, where a much

wider range of influences and everyday non-mediated experiences may play a stronger role. (p. 343)

Since Gerbner and Gross's (1976) original work, cultivation theory has remained one of the most researched areas within media and communication science (Morgan et al., 2015; Potter, 2014). To get an estimate of the overall "true" cultivation effect, Morgan and Shanahan (1997) analyzed the past 20 years of cultivation research through a meta-analysis. The overall cultivation effect was, on average, .09 (Pearson's $r$), suggesting that television viewing has a small but significant effect on people's perceptions of reality.

Although the original hypothesis describes cultivation as an effect caused by overall television consumption, researchers have applied cultivation theory to *genre-specific* media exposure as well. For instance, some studies on overall TV *news* exposure show a positive effect (Chiricos, Eschholz, & Gertz, 1997; Chiricos, Padgett, & Gertz, 2000), while other studies find no support for such a relationship (Chadee & Ditton, 2005). The theory has also been applied to other news media types than television. For example, some studies have found that reading newspapers is positively related to fear of crime (Jaehnig, Weaver, & Fico, 1981), while other studies have not found any effect (Chadee & Ditton, 2005; Chiricos et al., 2000).

Even though most empirical analyses of the cultivation hypothesis have focused on the effects of traditional media, some later studies have expanded the scope to include online media as well. These studies found mixed support for the hypothesis. For example, Chadee, Smith, and Ferguson (2017) and Wu, Li, Triplett, and Sun (2019) found no support for social media consumption being related to increased fear of crime, whereas Intravia, Wolff, Paez, and Gibbs (2017) did identify such a relationship. Taken together, there is currently little support for online media consumption being related to increased fear of crime. However, these studies do not account for selective exposure, and although only a few studies support the cultivation hypothesis within the digital media context, it is still possible that cultivation occurs among smaller groups of people who actively seek out news that confirms their own perceptions.

Focusing first on the role of traditional media and following the original cultivation proposition that people's *total news consumption* should cultivate crime perceptions, we first address some of the methodological limitations in previous research by using longitudinal data to analyze this relationship dynamically over time (Potter, 2014; Shehata et al., 2021; Shi et al., 2019). More specifically, apart from studying (a) baseline cross-sectional correlations, we extend the hypothesis to also cover (b) longitudinal cultivation effects as well as (c) selection effects over time. By traditional news media, we refer to the nationally leading established news sources governed by journalistic professional norms and values.

H1a:    *Frequent exposure to traditional news media is related to more negative perceptions of crime development in Sweden.*

H1b:    *Frequent exposure to traditional news media will, over time, reinforce the perception that the Swedish crime development is negative (cultivation effect).*

H1c:     *Perceiving the Swedish crime development as negative will, over time, reinforce the behavior of seeking out traditional news media (selection effect).*

### The Limits of Cultivation: Human Agency and Reinforcing Spirals

Media environments have changed dramatically since Gerbner introduced cultivation theory in the late 1960s (Morgan et al., 2015). With television having gone from being the dominant medium in people's homes toward becoming one of the many media sources that people consume, questions have been raised regarding the relevance of cultivation theory in contemporary high-choice media environments (Shrum, 2017). As argued by Bryant (1986), "If cultivation research is to remain current, it will have to accommodate, rather than subordinate, notions of . . . audience selectivity" (p. 233). In a similar way, Shi and colleagues (2019) note that selective exposure to partisan media is likely to result in differential cultivation effects and suggest that future cultivation research should include "more nuanced measures of media consumption in accordance with the changing media landscape" (p. 1490).

To address the weaknesses of cultivation theory in contemporary media environments and to highlight the role of human agency in media consumption, we synthesize cultivation theory with the RSM. The RSM shares several characteristics with cultivation theory, but the two also differ in significant ways (Perse & Lambe, 2017; Slater, 2014). Both cultivation theory and the RSM are concerned with the effects of media exposure on beliefs, attitudes, perceptions, and behavior. Both theories also focus on long-term effects although most cultivation research has failed to integrate this into empirical research (Potter, 2014; Shehata et al., 2021). A significant difference, however, is that the RSM developed in an era of greater opportunities for media choice. As such, the RSM incorporates human agency and selective exposure as part of the equation, while cultivation theory focuses on the broad content patterns disseminated through the leading broadcasters (Gerbner et al., 1986; Morgan & Shanahan, 2010). Another major difference concerns the long-term outcome of each process. The key cultivation concept of mainstreaming suggests that heavy media consumption brings people from diverse backgrounds and opinions closer together toward a mainstream position (Shanahan, 2009). According to the RSM, on the other hand, selective media consumption of different media outlets is expected to reinforce contrasting beliefs and polarize the public.

More specifically, the RSM seeks to understand "media's role in helping create and sustain both durable and more transient attitudes" (Slater, 2014, p. 370) and considers media use and effects as a mutually reinforcing spiral. The RSM suggests that selective exposure to attitude-consistent news contributes to attitude reinforcement and that these attitudes, in turn, further influence selective exposure to attitude-consistent news. Over time, this will lead to reinforced social identities that include aspects such as attitudes, values, and ideologies (Slater, 2009). In the case of crime perceptions, this means that people who consume attitudinally congruent media will, over time, reinforce their perception of crime development as well as the other way around. Previous research has observed these reinforcing spiral processes not only on more general topics such as ideology (Dahlgren et al., 2019; Hutchens, Hmielowski, & Beam, 2019; Stroud, 2010) but also on specific issues such as climate change (Feldman et al., 2014) and immigration (Schemer, 2012; Theorin, 2019).

### Reinforcing Spirals and Alternative News Media

One significant expression of the changing media environment toward greater opportunities for media choice is the emergence of numerous alternative news media sites online (Andersen, Shehata, & Andersson, 2023; Holt et al., 2019). Right-wing alternative media have especially been prominent in this development (Haller, Holt, & de La Brosse, 2019). In essence, alternative media can be defined as media that are "not corporately owned and which circulate political messages felt to be underrepresented in mainstream media" (Chandler & Munday, 2016, p. 12) and that often present "alternative" perspectives of reality (Holt, 2018). Examples of such sites are The Canary in the United Kingdom (Andersen et al., 2023), PI-NEWS in Germany, and Breitbart and Infowars in the United States (Haller et al., 2019).

While many alternative news sites have emerged during the last decade, the phenomenon is far from new. Alternative media have historically been associated with social movements, and in particular left-wing activism during the 1970s (Ihlebæk & Nygaard, 2021). What has changed since then, besides a shift from mainly left-wing alternative media to a dominance of right-wing alternative media, are the technical developments that have made it easier "for producers to establish and run alternative news media, also for non-journalists, and easier for the audience to access them" (Andersen et al., 2023, p. 835). In addition, social networking sites have further amplified the role of alternative news media by making it easier for producers to distribute content. Algorithms on social media sites also personalize people's news feeds in accordance with people's preferences (Andersen et al., 2023; see also Ohme, 2021).

Emphasizing the role of human agency, Andersen and colleagues (2023) draw on uses and gratification theory to suggest that alternative news media use can be considered instrumental since people using these sites are likely to "actively seek information that better fulfil their preferences and gratify their needs than the content found in mainstream media" (p. 4). Following Andersen and associates (2023), this study builds on the concept of *alternative news orientation*, which refers to

> the extent to which people actively seek out information from sources that provide new or different perspectives on societal issues, either directly or via social media, that are more in correspondence with the users' own views than information found in mainstream media. (Andersen et al., 2023, p. 836)

Citizens' orientation toward alternative news thus captures the extent to which people take advantage of the media choice opportunities available to them by seeking out news from other sources than mainstream media (Andersen et al., 2023).

From the RSM perspective, it is worth noting that crime is a salient and recurring topic on many alternative news sites—also in the Scandinavian and Swedish contexts (Ihlebæk & Nygaard, 2021; Mayerhöffer, 2021; Nygaard, 2019; Sandberg & Ihlebæk, 2019). It is therefore likely that citizens who actively seek out news from these sources encounter crime-related stories—content that may reinforce preexisting crime perceptions. By distinguishing between open and closed systems, the RSM highlights the

conditionalities of belief reinforcement. A closed system is not under the influence of external social or environmental factors. Within such a system social identities and associated attitudes can spiral to extremes through positive feedback loops. An open system, however, can be understood as a social environment where reinforcing spirals are constrained by several external factors—environmental, social, and psychological (Slater, 2007, 2009). As noted by Slater (2007),

> The effects of spirals of communication selectivity and effects are likely to be particularly strong in groups that seek to motivate closure to outside influences. Such closure can be encouraged through (a) a culture of suspicion of outside influences such as mainstream media; (b) use of group-specific media . . . that consistently reiterate a consistent and distinctive worldview. (p. 292)

Alternative media can be understood partly as a closed communication subculture. Dahlgren and colleagues (2019) suggest that people who "habitually use attitude-consistent blogs, attitude-consistent news sources or follow like-minded individuals who share attitude-consistent information on social networking sites" (p. 163) have an increased likelihood of creating positive feedback loops that may spiral into extreme attitudes. It would, therefore, be reasonable to assume that alternative media exposure has the potential to encourage positive feedback loops on crime perceptions (Theorin, 2019).

Against this background, our next hypotheses focus on whether cultivation effects are limited to the broad patterns of traditional news media or if they are driven more strongly by selective use of alternative online media. Following the previous outline, the first of these hypotheses speaks to relationships at the cross-sectional level:

*H2a:*    *Orientation toward alternative news is related to more negative perceptions of crime development in Sweden.*

Following research on cultivation, reinforcing spirals, and alternative media, we further expect that an orientation toward alternative media will have stronger reinforcement effects on crime perceptions over time than toward traditional news media.

*H2b:*    *Orientation toward alternative news has a stronger reinforcement effect on crime perceptions than the use of traditional news media (cultivation effect).*

Based on the RSM framework and research showing that selective media use and perceptions are reciprocally related, we expect that perceptions of crime development will, over time, have a stronger effect on orientation toward alternative news than use of traditional news media. Thus, the third hypothesis is as follows:

*H2c:*    *Perceptions of crime development have a stronger effect on alternative news orientation than on the use of traditional news media (selection effect).*

Taken together, the main purpose of this study is to test whether there are differential reinforcement effects between traditional news media use and alternative news orientation, on the one hand, and perceptions about crime developments, on the other hand. Drawing on both cultivation theory and the RSM, our approach builds on the notion that potential media effects on crime perceptions are due to both (1) content effects and (2) selection effects. The basic cultivation argument rests on the assumption that the media provide a predominantly negative picture of reality, particularly regarding crime. To address this "content assumption," we present findings from a media content analysis of crime reporting before testing our hypotheses on reinforcement effects.

## Methodology

To test our hypotheses on cultivation effects on crime perceptions in Sweden, this study relies on a combination of a media content analysis and a longitudinal three-wave panel survey. Both data collections cover the period between March 2018 and December 2019. This section describes the two data sources, measures, and analytical approach. Before doing so, however, we describe relevant aspects of the Swedish media system.

### *The Swedish Context*

In Sweden, the state had a monopoly on radio and TV until the late 1980s, and since its dissolution, the number of TV and radio channels has increased significantly. With the rise of the Internet and the advent of social media, the expansion of content choice has increased even more (Graber & Dunaway, 2018). As in most other Western countries, the growing supply of media outlets and content has resulted in growing opportunities for citizens to match content with preferences and political predispositions (Shehata, Ekström, & Oleskog Tryggvason, 2022).

Swedish alternative media have also surged in recent years. Right-wing alternative sites like *Nyheter Idag, Fria Tider,* and *Samhällsnytt* are today used by approximately 10% of the population every week (Newman, Fletcher, Kalogeropoulos, & Kleis Nielsen, 2019). There are also a number of left-wing alternative sites such as *ETC, Aktuellt Fokus,* and *Dagens Arena* although many of them have existed for a longer period. Most recent research on Swedish alternative news has focused on right-wing alternative news sites. A common trait among these sites is their critical stance toward immigration (Holt et al., 2019), and their key message is often that "mainstream journalists have teamed up with the political elites and engage in witch-hunts of critics, while ignoring abuses by those in power" (Nygaard, 2019, p. 1148).

### *Media Content Analysis*

Since our hypotheses rely on the assumption that both traditional and alternative media provide a relatively negative picture of crime developments, we conducted a manual media content analysis to determine how both traditional and alternative media covered violent crimes during the period of our panel survey, that is, between March 2018 and December 2019. The content analysis was based on digital newspaper articles about violent crimes in five traditional media outlets as well as six alternative

media outlets. A sample from the full population of articles (see appendix for search string) during this period (traditional media: $N$ = 60,117, alternative media: $N$ = 6,194) was drawn using multistage sampling (traditional media: $n$ = 682, alternative media: $n$ = 222). First, a proportionate stratified sampling method was used. The population of traditional media articles was divided into groups in accordance with their publishing month and their news media source. Thereafter, the sample from each news media outlet in each month was divided proportionally. Second, a systematic random sampling method was employed to achieve a random sample in each month.

The unit of analysis was entire news articles about violent crimes in traditional media (*Swedish Television*, *Expressen*, *Aftonbladet*, *Svenska Dagbladet*, and *Dagens Nyheter*), right-wing alternative media (*Fria Tider*, *Nyheter Idag*, and *Samhällsnytt*) and left-wing alternative media (*ETC*, *Aktuellt Fokus*, and *Dagens Arena*). These alternative news media sites were chosen as they are among the most well-known alternative media sites in Sweden. Also, by including several outlets, the measures become more representative of a broader spectrum of Swedish alternative media. Three measures were used to compare the *content, tone,* and *style*. The first concerned what types of criminal activities each news item focused on. The second measure concerned whether the news item conveyed a positive, negative, balanced, or neutral impression of the violent crime development (i.e., references to increasing/decreasing crime rates, failure/success, deterioration/improvement, etc.). The third measure concerned whether or not the news item included alarmistic words (i.e., use of strong adjectives and/ or emotionally charged words such as system collapse, alarming, catastrophe, crash, disaster, fiasco, emergency, out of control, failed beyond repair, epidemy, crisis, etc.). The coding was performed by a single coder.[2] To examine the intercoder reliability, an external coder was employed to recode 54 randomly chosen articles. The reliability test showed high to acceptable intercoder reliability (Krippendorf's alpha). The specific values were 0.91 for criminal activities, 0.83 for crime development, and 0.68 for alarmistic words.

### Panel Survey

The data were collected through a web panel hosted by the Laboratory of Opinion Research (LORE), University of Gothenburg. A sample of 3,397 respondents pre-stratified on gender, age, education, and political interest, was drawn from a pool of probability-recruited participants. The first wave was collected between March and April 2018; the second wave was collected between December 2018 and January 2019; and the third wave was collected in October 2019. In the first wave, 2,291 respondents participated (American Association for Public Opinion Research Response Rate 5 [AAPOR RR5]: 67%); in the second wave, 1,880 respondents participated (AAPOR RR5: 59%); and in the third wave, 1,819 respondents participated (AAPOR RR5: 63%). In total, 1,508 respondents participated in all three waves, which gave a total response rate of 44.4%.

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[2] The complete code sheet and instructions are available from the authors on request.

### Measures

*Crime Perceptions*

Although most previous research on cultivation theory has been occupied with examining second-order effects, this study followed the example of cultivation studies that have measured first-order effects (e.g., Grabe & Drew, 2007; Jamieson & Romer, 2014; O'Connell & Whelan, 1996; Pfeiffer, Windzio, & Kleimann, 2005; Shi et al., 2019). The measure was based on four items measuring people's agreement-disagreement with claims concerning violent crimes in Sweden. Respondents were asked the following overall question: "Different claims are sometimes heard in public discourse on crimes of violence and criminality. To what extent do the following statements correspond with your own understanding?" The specific items were the following: (1) Violent crimes have increased in Sweden during the past year; (2) Since the 1950s, violent crimes have decreased in Sweden; (3) More violent crimes are committed in Sweden than in our neighboring countries; and (4) Violent crimes is an issue that is often exaggerated in the societal debate. Response categories ranged from 1 ("Not true at all") to 5 ("Completely true"), with an additional "Don't know" option. Based on a Principal Component Analysis (PCA), these items were added to an index of crime perceptions (Cronbach's α = 0.85), with higher values indicating a more negative perception of Swedish crime development. Before constructing the index, items 2 and 4 were reversed. "No opinion" responses were coded as missing.

*Traditional News Media Exposure*

Overall traditional news media exposure was measured using a set of items tapping the frequency of both online and offline use of several news media outlets. Respondents were asked, "How often do you consume news from the following news media outlets (in traditional channels or via the Internet)?" The specific outlets were (1) *Swedish Television*; (2) *TV4*; (3) *Dagens Nyheter*; (4) *Svenska Dagbladet*; (5) *Expressen*; and (6) *Aftonbladet*. Response categories ranged from Daily (= 6) to Never (= 1). An index tapping total news consumption was constructed based on these items, with higher values representing more frequent use of traditional news media.

*Alternative News Orientation*

This study measured orientation toward alternative news by using a set of items tapping people's general inclination to seek out news that provide an alternative perspective on politics and society (Andersen et al., 2023). More specifically, respondents were asked, "How often do you use online news sites or social media to access— (1) news about societal issues not reported by traditional news media outlets?; (2) news that provides an alternative perspective on societal issues than traditional news media?; (3) news that reports on societal issues the way I see them?; (4) news that focuses on issues I worry about?; (5) news that provides an alternative perspective on crimes than the traditional news media?". Response categories ranged from Daily (= 6) to Never (= 1). Based on a PCA, these items were merged into an index of alternative media use (Cronbach's α = 0.89), where higher values indicated a higher frequency of seeking out alternative news. Although this type of measurement limited us from analyzing the potential differential effects between left- and right-wing alternative news media consumption, capturing the broader inclination

of seeking out alternative news provided a more comprehensive approach than listing all alternative news media sites available in the Swedish context.

In addition to these key variables, we also included gender, age, and education as control variables. These factors are known predictors of both crime perceptions and media use (Callanan, 2012; Eveland & Scheufele, 2000).

### *Data Analysis*

To test the hypotheses, bivariate correlation analyses, as well as a series of cross-lagged models using structural equation modeling, were employed. Cross-lagged panel models estimate variables' directional, over-time, influence on each other (Allen, 2017), which in this case means that the reciprocal relationship between media use and crime perceptions as well as the relative strength of such effects can be explored. Since this type of modeling controls for the lagged values of each variable, it enables analysis of how each predictor is related to over-time between-person changes in the outcome variables.

## Results

Cultivation theory relies on the assumption that the media provide a "mean-world" portrayal of society in general by focusing on violent crimes in particular. The argument analyzed here holds that alternative media provide an even more negative picture of violent crimes and crime rates than traditional news media. Before testing our hypothesis of the potential differential effects of traditional news and alternative media on crime perceptions, we present findings from the media content analysis.

### *Violent Crimes in Swedish News Media*

To begin with, the number of articles about violent crimes in both traditional media and alternative media was relatively stable throughout the period. The number peaked in some months, but no obvious upward trend was identified.

Overall, the Swedish media convey a relatively neutral tone of crime development (73.1%) with some elements of a negative tone (22.1%). Although one could argue that the topic by itself is inherently negative, making a positive tone unlikely, articles pointing toward a positive crime development were virtually nonexistent (1.1%). In that sense, our findings confirm the overall neutral-negative reporting of crime by the Swedish media, supporting the basic assumption behind cultivation and our hypotheses. There were, however, also variations across different types of media. As illustrated in Figure 1, alternative media sources used a much more alarmistic and negative tone in their crime reporting than traditional news media.

Looking at the numbers in somewhat more detail, public service, as well as alternative media, conveyed a much more negative tone of crime development (public service: 30.4%, alternative media: 43.7%) compared with the other media sources (13.7%). Left-wing alternative media published a few articles with a neutral tone (16.4%), and although the negative tone was the most common, these media

had a higher frequency of balanced (12.7%) and positive (5.5%) articles too. Alarmistic wording was also relatively rare (12.1%), but there were considerable differences between the different types of media. Right-wing alternative media, as well as left-wing alternative media, had a much higher frequency of alarmistic wording (32.4%) when compared with traditional news media outlets (5.4%).
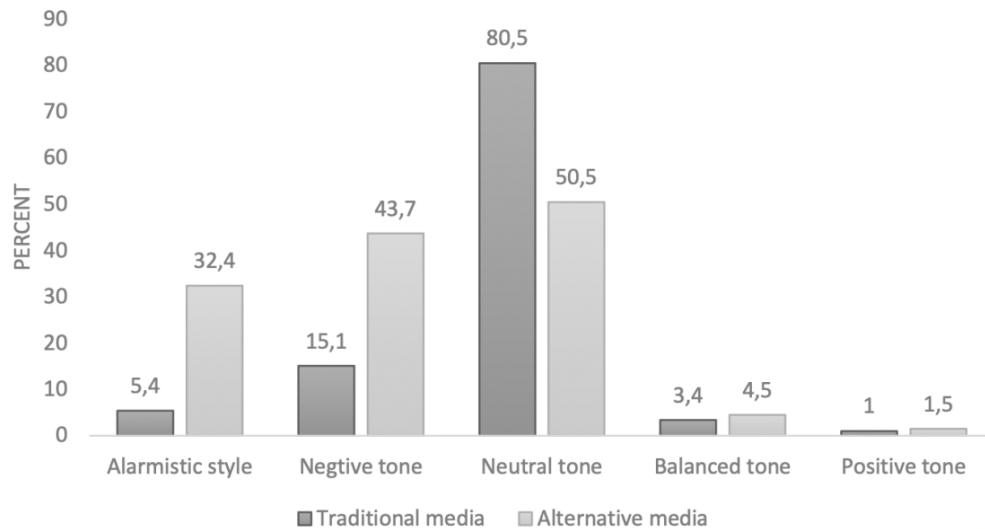


**Figure 1. Alarmistic style and tone in traditional and alternative media (%).**
*Note.* Share of articles with specific content characteristics, divided by traditional news media (*n* = 682) and alternative media (*n* = 222).

### Perceptions of Violent Crimes Among the Public

Before presenting and analyzing the findings of the cross-lagged models, it is worth noting that Swedes seemed to have a negative perception of Swedish crime development. For instance, approximately 53% agreed with the statement that *the number of violent crimes has increased in Sweden over the past year*, while only 25% disagreed with it (wave 1). The corresponding number was 55% in wave 2 and 57% in wave 3. Using our index of crime perceptions ranging from 1 to 5, the mean value was 3.42 (*SD* = 1.51) in wave 1, 3.41 (*SD* = 1.10) in wave 2, and 3.45 (*SD* = 1.11) in wave 3.

The original cultivation hypothesis proposes that people's overall media consumption cultivates their perception of crime. Hypotheses 1a, 1b, and 1c focus on whether this grand claim holds true in contemporary media environments. A simple bivariate correlation suggests that people with higher overall news consumption have more negative views of crime development in Sweden ($r$ = .12, $p$ < .001), which supports H1a.

Bivariate cross-sectional correlations, however, say little about reciprocal and dynamic relationships over time. Therefore, H1b and H1c focus on whether there is a mutually reinforcing relationship between overall media consumption and crime perceptions. The main results speaking to these hypotheses are shown in Figure 2. The findings from the cross-lagged panel analysis reveal no statistically significant *cultivation effects* between overall news media exposure and crime trend perceptions, as well as no statistically significant *selection effects* between news media exposure and crime trend perceptions. This suggests that (1) frequent exposure to news media does not influence perceptions of violent crime development in Sweden and (2) crime perceptions do not influence news media exposure over time. Thus, the findings cannot lend support for a mutually reinforcing relationship between news media exposure and crime perceptions. Hypotheses 1b and 1c can therefore be rejected.

Our next hypotheses focus on the role of alternative news orientation. It is worth noting that relatively many citizens engage in this type of behavior, or at least it is far from uncommon. Approximately 55% of our respondents said that they either "Never" or "Seldom" used news websites or social media to get an *alternative perspective on crimes than provided by traditional news media,* while around 16% said they did so several days a week. These numbers remained highly stable across the waves. Using our alternative news orientation index ranging from 1 to 6, mean values were 2.99 ($SD = 1.28$), 2.94 ($SD = 1.31$), and 2.97 ($SD = 1.30$) across the three waves.
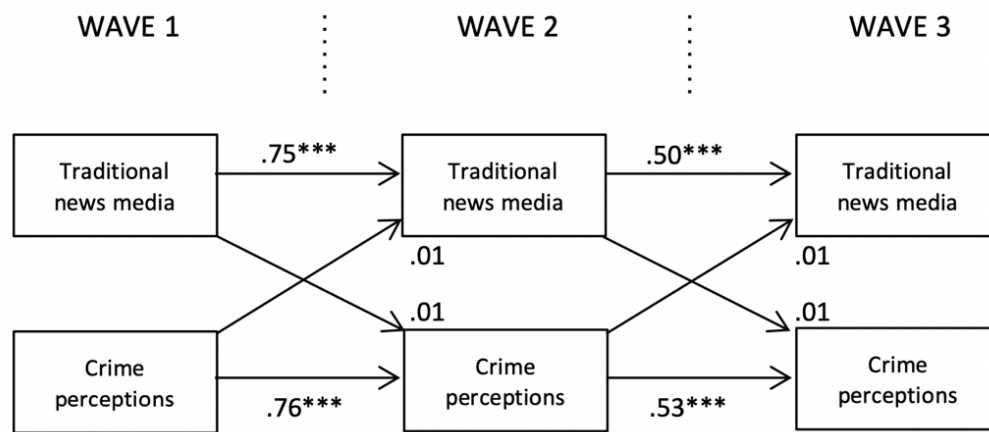


**Figure 2. Cross-lagged effects between crime perceptions and traditional news media use.**
*Note.* Estimates are standardized path coefficients. Each equation controls for gender, age, and education. Cross-lagged effects were constrained to equality across waves. Correlations between all exogenous variables and residuals at each panel wave were allowed (not displayed). Autoregressive structural paths between wave 1 and wave 3 were added after assessment of model fit (not displayed). $N = 2,494$. $\chi^2$ (4) = 2.03, $p = .731$, root mean square error of approximation (RMSEA) = 0.000, comparative fit index (CFI) = 1.000. The model was estimated using full information maximum likelihood (fiml).

A first indication of the relationship between alternative news orientation and crime perceptions ($r$ = .21, $p$ < .001) suggests that people who seek out such news have a more negative view of crime development (supporting H2a). Figure 3 presents findings speaking to H2b and H2c focusing on reciprocal influences. Again, the cross-lagged model controls for gender, age, and education. The findings suggest a pattern of mutual influences in both directions. Having a negative view of Swedish crime development is associated with an increased tendency to seek out alternative news ($b$ = .08, $p$ < .001). In turn, the use of alternative media increases negative views on crime development over time ($b$ = .04, $p$ < .001)—although the cultivation effect appears weaker than the selection effect. A formal statistical test reveals that these coefficients are significantly different from each other ($\chi^2(1)$ = 4.08, $p$ < .05). Taken together, however, there seems to be a mutually reinforcing relationship between alternative media exposure and crime trend perceptions, lending support to both H2b and H2c.
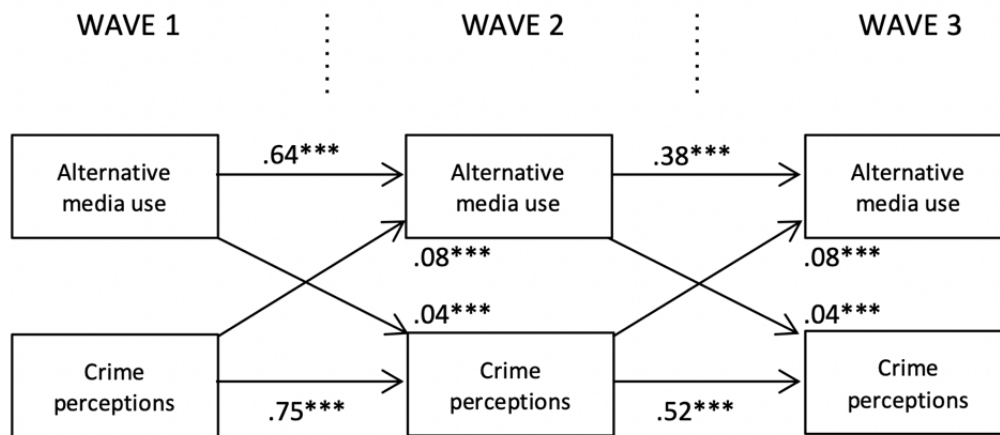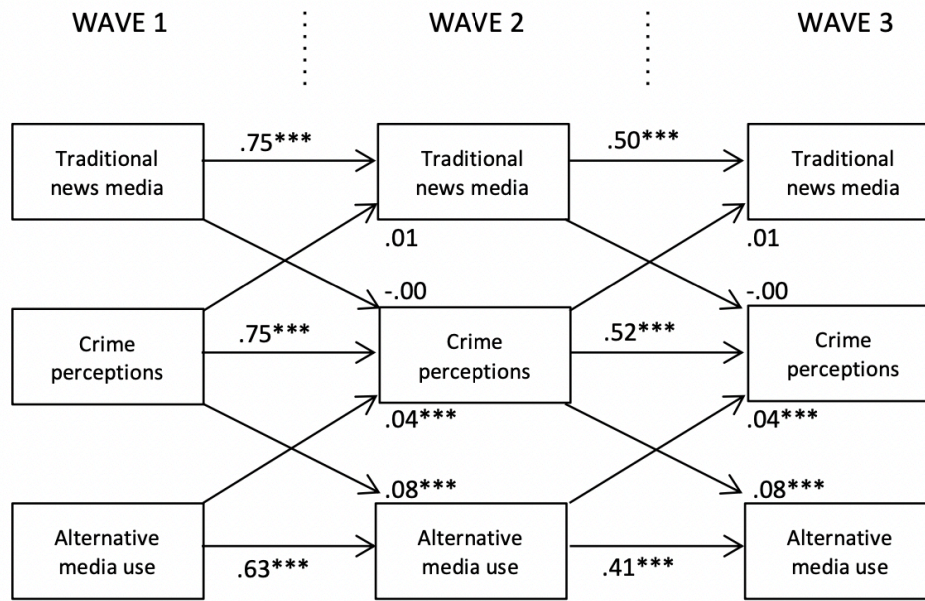


**Figure 3. Cross-lagged effects between crime perceptions and alternative media use.**
*Note.* Estimates are standardized path coefficients. Each equation controls for gender, age, and education. Cross-lagged effects were constrained to equality across waves. Correlations between all exogenous variables and residuals at each panel wave were allowed (not displayed). Autoregressive structural paths between wave 1 and wave 3 were added after the assessment of model fit (not displayed). $N$ = 2,494. $\chi^2$ (4) = 16.58, $p$ = .002, RMSEA = 0.036, CFI = 0.998. The model was estimated using fiml.

To provide a combined test of the mutual influences between crime trend perceptions and media use, Figure 4 presents a combined cross-lagged model including both traditional and alternative media use. This allows for a comparison between traditional media and alternative news orientation. Doing so does not change anything compared with the findings reported above. Orientation toward alternative news continues to display a significant relationship with crime perceptions in both directions, while there are no significant effects for traditional news media. More importantly, a formal statistical test of difference between coefficients indicates that the cultivation effect is significantly stronger for alternative media than for traditional news ($\chi^2(1)$ = 5.26, $p$ < .05). The same is true regarding the selection effect, which is significantly stronger for alternative news orientation than for traditional news ($\chi^2(1)$ = 16.79, $p$ < .001). These findings

suggest that the reinforcing spiral between media use and crime perceptions is more pronounced for alternative media than for traditional news.



**Figure 4. Cross-lagged effects between crime perceptions, traditional news media and alternative media use.**

*Note.* Estimates are standardized path coefficients. Each equation controls for gender, age, and education. Cross-lagged effects were constrained to equality across waves. Correlations between all exogenous variables and residuals at each panel wave were allowed (not displayed). Autoregressive structural paths between wave 1 and wave 3 were added after the assessment of model fit (not displayed). $N = 2,494$. $\chi^2$ $(14) = 54.951$, $p < .000$, RMSEA = 0.034, CFI = 0.996. The model was estimated using fiml.

### Conclusion: From Cultivation to Self-Cultivation

The main purpose of this study was to improve our knowledge of the relationship between media use and crime perceptions in contemporary high-choice media environments. Historically, this has been the main research question addressed by cultivation theory and research. People's perceptions of violent crimes are assumed to be cultivated over time by the dominant and consistent messages provided by mass media—including news (Morgan & Shanahan, 1997; Shanahan, 2009). As such, cultivation remains *the* media effects theory specifically addressing crime perceptions.

At the same time, cultivation theory was developed when media environments were dramatically different from today's high-choice structure (Gerbner et al., 1986; Morgan et al., 2015). This has made some of the assumptions of cultivation theory less tenable (Bryant, 1986; Perse & Lambe, 2017). To incorporate greater audience selectivity, allow for human agency in news choices, and, thereby, differential susceptibility to cultivation effects (Shehata et al., 2021; Valkenburg & Peter, 2013), we therefore suggested

analyzing media effects on crime perceptions from the RSM approach. More specifically, we explored how violent crime content differs among various types of media as well as examined mutually reinforcing relationships between crime perceptions and news media exposure, including both traditional and orientations toward alternative news.

Overall, the findings suggest that there are reasons to qualify some of the fundamental premises of cultivation theory. The notion that media messages are homogenous and media audiences are passive is to some extent questionable since crime reporting varies across outlets, and active news choices matter for subsequent belief dynamics. More specifically, the findings from the content analysis suggest that there are outlet-specific differences in Swedish violent crimes news reporting, most notably between alternative media and traditional media. While news coverage has an overall neutral-negative tendency, alternative media—both left-wing and right-wing—convey a more negative impression of violent crime development and use alarmistic words more frequently compared with traditional media.

Findings from the cross-lagged panel analyses show that while a correlation between traditional news media exposure and crime perceptions was found (H1a), there was no evidence for a mutually reinforcing relationship between these factors (H1b and H1c). However, when analyzing the relationship between orientation toward alternative news and crime perceptions, the results suggest that not only do citizens who are orientated toward alternative news have more negative perceptions of crime development (H2a) but also that there is evidence for a mutually reinforcing relationship between these factors over time. In fact, the reinforcing spiral involving both media effects and selections effects were significantly stronger for alternative news than for traditional news media (H2b and H2c). Thus, citizens who increasingly make use of alternative news cultivate more negative perceptions of crime development over time, which in turn influence their subsequent use of alternative news.

These results have several important implications, not least in terms of how to understand cultivation processes in today's media environment. Traditionally, cultivation research relied on the idea of relatively passive audiences, rather than active news users. Instead of broad cultivation effects cutting across diverse mass audiences (Gerbner et al., 1986; Perse & Lambe, 2017; Potter, 2014), we build on the notion of greater human agency in media choices in general, and the RSM in particular, to suggest that long-term "cultivation" is more likely to take place among smaller segments of the population where media selectivity is the driving force—an argument emphasized by Bryant (1986; see also Shi et al., 2019). As such, we propose *self-cultivation* as a new concept that can be used to understand cultivation processes in today's media environment. This term is inspired by Arnett's (1995) concept of "self-socialization," which was used to understand long-term socialization processes based on individual media choices. In socialization research too, individuals have traditionally been regarded as passive receivers but the agency role among individuals is today increasingly emphasized. Self-cultivation can, thus, be understood as cultivation processes in subgroups where people self-select content that is aligned with their own perception of the world—specifically highlighting the role of human agency behind news choices (Slater, 2014; Stroud, 2010).

Two other important implications of the findings relate to more specific concepts of cultivation theory and the RSM. First, an important distinction between cultivation theory and the RSM concerns the long-term outcome of each process. The cultivation concept of mainstreaming is the idea that people with diverse

backgrounds will, over time, become more similar in their beliefs (Shanahan, 2009). The RSM instead presumes that the process will reinforce contrasting beliefs and, thus, result in increased belief polarization (Slater, 2007). As reinforcing cultivation and selection effects were found for alternative news orientation, this suggests that crime perceptions are unlikely to move toward a mainstream position; instead, they become increasingly polarized. Relating this to our proposed concept of self-cultivation, it is reasonable to assume that self-cultivation will reinforce contrasting beliefs rather than moving beliefs closer together.

Second, these findings can also be understood in relation to the discussion of homeostasis and positive feedback loops within the RSM framework (Slater, 2007, 2014). Slater (2007) suggested that positive feedback loops in reinforcing effects may be particularly pronounced in groups with a closed communication system where there is a "culture of suspicion of outside influences such as the mainstream media" and where the group uses the media that "consistently reiterate a consistent and distinctive worldview" (p. 292). Alternative media users can, to varying degrees, be considered as such groups (see e.g., Nygaard, 2019), and this might be the reason why cultivation effects occurred for alternative media users while traditional media users might have reached a level of homeostasis (Slater, 2007) instead.

Although this study has made distinct contributions to the literature on cultivation and reinforcing spirals, we would like to discuss some important caveats and limitations. First, while both cultivation theory and the RSM focus on long-term effect dynamics, one could question whether our study design is long-term enough. We captured developments over a period of 1.5 years, characterized by a relatively high and stable salience of violent crimes reporting in the media. This is certainly a longer time frame than most previous cultivation studies—which rarely employ longitudinal designs—but is perhaps more appropriately characterized as "medium term." While we believe this time frame is sufficient for capturing the basic mechanisms and reinforcement processes theorized, only future studies using longer designs can better address this question (Shehata et al., 2021).

Second, a potential explanation for the differential reinforcement effects of traditional and alternative news may be methodological. While the use of traditional news media was measured based on outlet-specific exposure survey items, we relied on the concept of alternative news orientation to measure the use of alternative news. This has two implications. On the one hand, these measures are not strictly comparable—which should be kept in mind when interpreting the main findings of the study. For instance, the fact that our measure of alternative news orientation includes specific motivations for using alternative media makes them somewhat "polluted" when it comes to differentiating content effects from selection effects. This may partly explain why we found stronger "selection effects" than "cultivation effects" for alternative media in our cross-lagged model. It should be noted, however, that previous studies conducted in Sweden, relying on standard outlet-specific measures of exposure to alternative media sources, have also shown that alternative media have stronger reinforcement effects than traditional news sources although they focused on attitudinal and ideological outcomes from a reinforcing spirals framework (Dahlgren et al., 2019; Theorin, 2019).

Furthermore, by focusing on alternative news orientation and measuring a broader inclination of seeking out alternative news rather than the frequency of using specific alternative news media outlets, we were not able to analyze the potential differential effects of left-wing and right-wing alternative media outlets. This is a limitation in the sense that various types of alternative media consumption could affect

crime perceptions in various ways, and with our choice of measure we are unable to analyze if there were differences in reinforcement effects between left- and right-wing alternative media consumption. At the same time, the content analysis clearly indicated that alternative media were significantly more negative in crime reporting than traditional media, regardless of their ideological profile.

With these limitations and caveats in mind, however, this study has contributed several important insights providing some directions for future research. Most importantly, we suggest additional work on long-term cultivation of beliefs in a new media environment, focusing on how various selection mechanisms contribute to such processes. Theoretically, more work is needed to further develop the concept of self-cultivation, seeking to integrate classic cultivation mechanisms with greater opportunities for media choice. Methodologically, we suggest using longitudinal panel data over extended time periods to better capture these "selective" cultivation processes—similar to some recent RSM research.

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