

Media Echo Chambers

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Selective Exposure and Confirmation Bias in Media Use,
and its Consequences for Political Polarization

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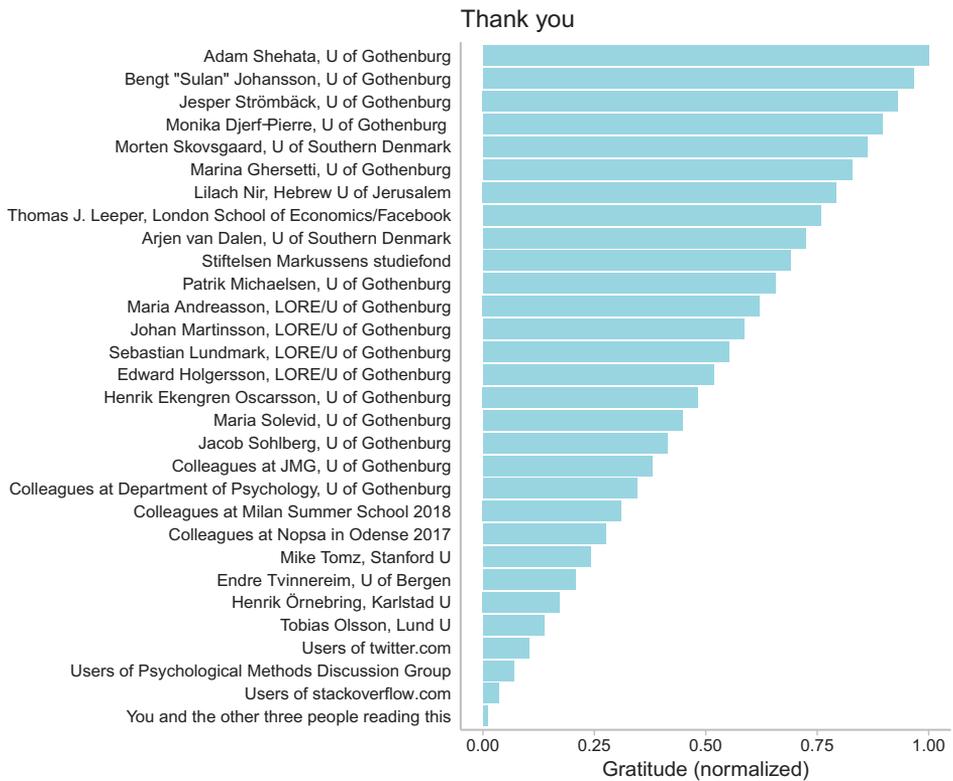
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for
Thomas

R.I.P.

Acknowledgments



1 The Marketplace of Attention

Cable television and the internet have created a high-choice media environment that has increased the chances for people to more easily find news and information that support their beliefs and attitudes. How does this affect people’s selection of content and their attitudes?

If one were to capture the point of this thesis in one sentence, it would be that “your world is the outcome of what you pay attention to” (Newport, 2016, p. 79). What you submit to your attention is of great importance for what you see, and this means that any bias in the information you search for can have detrimental consequences for what you ultimately think and do. Or as the common paraphrase of Voltaire goes, *those who can make you believe absurdities, can make you commit atrocities*.

The first step in order to believe something, however, is often to be exposed to it. *Selective exposure* is therefore the main focus of this thesis, which can be seen as the “motivated selection of messages matching one’s beliefs” (Stroud, 2014),¹ and is often used synonymously with *confirmation bias* (Knobloch-Westerwick, 2014, p. 136).² More precisely, the main focus is whether (and how) this selective exposure increases *political polarization*.

If we judge a concept by the number of related concepts and vivid metaphors it can inspire, we can easily justify the importance of selective exposure. For example, related terms include confirmation bias, congeniality bias, congruency bias, myside bias, reinforcement seeking, information avoidance, biased information search, motivated information search, audience fragmentation, audience segregation, echo chambers, filter bubbles, information bubbles, information cocoons, cyber-balkanization, gated communities, information silos, sphericules, red media–blue media, internet ghettos or simply infocalypse. Even the alternative

¹ Although not limited to beliefs, people can also be selectively exposed based on attitudes or behavior. Following Hart et al. (2009, p. 556), “*attitude* is defined as the individual’s evaluation of an entity (an issue, person, event, object, or behavior; e.g., President Obama); *belief* is defined as an association between an entity and an attribute or outcome (e.g., President Obama is honest); and *behavior* is defined as an overt action performed in relation to an entity (e.g., voting for President Obama)”.

² For a more detailed discussion about the relationship between selective exposure and confirmation bias, see the theoretical chapter.

“selected” exposure is used.³

These concepts to varying degrees highlight the composition of the audience (fragmented or atomistic), their behavior (seeking or avoiding information), the causes of their behavior (technical, social, or individual), their processing of information (accepting supporting information and counter-arguing challenging information), and the possible outcomes (further avoidance or polarization of attitudes or beliefs). This implies that selective exposure is perhaps best understood as a process; rather than a specific state, which means that we might think about how it changes over time both within and between individuals, especially when we consider the media environment these individuals inhabit.

But there is a puzzle here. Based on what we already know about selective exposure, we should not expect that people’s individual media consumption is only influenced by their own decisions. Considering the massive increase in the number of choices for individuals and the ability to tailor the internet to their own needs, however, we may have reached a turning point with more selective exposure than ever before. In other words, selective exposure might play a larger role now than before, but the extent is largely uncertain. There is also great uncertainty about the extent and consequences of people’s individual selective exposure in today’s media environment, and even more uncertainty as to whether previous findings of selective exposure, primarily from the United States, are applicable to other countries and contexts. In short, has the media environment changed so dramatically during the last decades that people now choose media in order to live more secluded from each other, like an *echo chamber* where the only voices people hear are more of the same?⁴

More Information Sources

In the low-choice media environment we had not so long ago (Table 1.1), people could primarily choose between a handful of newspapers, television channels, and radio stations. A few editors and journalists acted as gatekeepers and decided for the rest of society what counted as valuable information. With the advent of cable

³ There are also numerous word pairs denoting information we agree or disagree with: consonant/dissonant, concordant/discordant, consistent/inconsistent, congruent/incongruent, confirming/disconfirming, supporting/non-supporting, like-minded/different-minded, supporting/challenging, supporting/opposing, pro-attitudinal/counter-attitudinal, attitude-consistent/attitude-inconsistent, orthodox/heterodox, and selective exposure/cross-cutting exposure. I include these to make the job of systematic reviewers easier.

⁴ I only use the *echo chamber* as an illustrative metaphor. It is not quite clear what the term actually implies and it is used rather loosely in the literature (for a discussion, see Bruns, 2019). But it sounds good, doesn’t it?

television, and more recently the internet, the number of options has grown dramatically—not only in terms of more channels from the traditional mass media, but also from partisan actors that can bypass the gatekeeping function of the mass media. The fear now is that people will not only pick the things they want, but also exclude from their media diet everything they *ought* to consume.

Table 1.1: **The media environment then and now**, as two distinct ideal types (based on Gripsrud & Weibull, 2010).

	Then	Now
Decade	About 1920s to 1980s	About 1990s onwards
Media market	Regulated media market Low commercialization Low globalization	Deregulated media market High commercialization High globalization
News media	Few news sources Low media concentration	Many news sources High media concentration
Audience	Few choices One passive audience Consumers of content	Many choices Many active audiences Both consumers and producers of content

When the media provided few choices, people might have had both ability and motivation to select whatever content they wanted, but they may have lacked the opportunity (Luskin, 1990). In a high-choice media environment, on the other hand, opportunities are more ubiquitous. The internet provides us with so many choices that one could make the case that this could be the end of our shared social world. More choice means that people’s personal motivations and abilities have more room to influence their content selection, which may give people highly “divergent impressions of the most important problems facing the nation” (Stroud, 2011, p. 164). More than a decade ago, some influential scholars therefore cautioned that we had entered an era of minimal effects (e.g, Bennett & Iyengar, 2008), following debates about internet services that provide a *Daily me* of current news and affairs, tailored for each and every individual, that could dissolve any shared social world and disunite people (Negroponte, 1995; Sunstein, 2001). The argument was that the

mass media may lose its influence on citizens since “the fragmentation of the national audience reduces the likelihood of attitude change in response to particular patterns of news” (Bennett & Iyengar, 2008, p. 724). As choices increase and people more often select what they want, that choice “may lead to less diversity of political exposure” (Mutz & Martin, 2001, p. 111), which can lead to, for example, poor decision-making (Fischer & Greitemeyer, 2010), false beliefs and rumors (Zollo et al., 2017), knowledge gaps (Prior, 2007), and most importantly for this thesis, fragmentation and polarization (Bennett & Iyengar, 2008),⁵ and without a shared view of reality, citizens may develop “highly polarized attitudes toward political matters” (Stroud, 2008, p. 342). In short, many choices raise concerns about the future of democracy.

But we should not push the pessimism too far. First of all, it is not self-evident that fragmentation and polarization are intrinsically bad, even if they are happening. Using a different vantage point, the same outcomes may be considered desirable. Secondly, even though media effects such as attitude change and persuasion may occur less frequently since people consume less traditional (news) media, it does not necessarily mean that media effects do not occur at all.⁶ Other types of media with other kinds of effects may take their place (Holbert, Garrett, & Gleason, 2010).

Conditional Media Effects

Rather than the world coming to an end in general, and when it comes to media effects in particular, an alternative interpretation is that we may have entered an era of more *conditional* media effects (see Arceneaux & Johnson, 2013; Valkenburg & Peter, 2013). In other words, if universal and large media effects are gone (if such a unicorn ever existed), it does not necessarily mean that the influence of media becomes minimal. Quite the contrary—we might expect an *increase* in the power of the media when people have greater opportunities “to instigate desired media effects upon themselves” (Knobloch-Westerwick, 2014, p. 3). One question thus becomes what *kinds* of media effects would come to dominate, and perhaps more importantly, why and how. Political polarization is one such media effect that has been discussed and is most likely, given that people become fragmented, keep to their tribes, and

⁵ *Fragmentation* can be defined in terms of breaking something into pieces, such that a large media audience becomes broken up into smaller ones, which would consequently reflect a different audience composition.

⁶ I simply refer to *media effects* as any (causal) influence a medium or its content may have on its recipients. See Eveland (2003), however, for various definitions.

only try to confirm their own beliefs and attitudes, while becoming more extreme (e.g., Bennett & Iyengar, 2008; Sunstein, 2001).⁷

Selective exposure can therefore arguably be seen as a particularly relevant and important theory in today's world since it precedes most, if not all, media effects, even though selectivity is not always explicitly taken into consideration by researchers, despite Lazarsfeld, Berelson, and Gaudet noting early on that “availability *plus* predispositions determine exposure” (1948, p. 89). If selectivity precedes media effects, it does not necessarily mean that all media effect theories must be thrown out the window. Rather, it may mean that *who* people are—their individual-level characteristics—could have more importance now than before in terms of what media effects become *relevant* (Valkenburg & Peter, 2013).

Political Predispositions of Media Use

There are three individual-level political predispositions, or political preferences, that are in various degree of focus throughout this thesis: political interest, party support (i.e., party identification), and most importantly, ideological leaning. These preferences are chosen because there is some evidence to suggest that they are important predictors of media use. However, the main focus of this thesis, especially when it comes to polarization, is ideological leaning.

Ideological leaning on the left/right dimension is a salient part of politics, and of Swedish politics in particular (Oscarsson, 2017). It may also function as an overarching framework that organizes and structures beliefs and attitudes. *Political interest* is a motivation that may directly influence what content people select. Political interest has consequently been recognized by some as a key motivational factor that shapes what news individuals tend to select and think about (Luskin, 1990; Prior, 2007). Individuals with higher levels of political interest usually consume more news, on average, and political interest is a more important predictor than education in some instances (Luskin, 1990). *Party support*, on the other hand, can be seen as a vessel in which ideology is transmitted, and consequently parties may come and go. In other words, parties can be concrete manifestations of ideologies, and

⁷ A search in the scholarly database Scopus on 8 January 2020 revealed that 12 percent (out of 805 documents about selective exposure) contain both “selective exposure” and “polariz*”, but only 7 percent contained both “selective exposure” and “reinforc*”, and 5 percent contained both “selective exposure” and “fragment*”. Adding British spelling as well (i.e., polarisation) would only increase these numbers. Similarly, Bennett and Iyengar (2008) who discuss polarization, had been cited 1,503 times according to Google Scholar on 8 January 2020.

more parties could translate into more opportunities for people to select a party that matches their beliefs or attitudes.

One way of assessing which of these political preferences may have the largest influence on media selection is to gauge to what extent they are heritable.⁸ In this case, political interest and ideological leaning are highly heritable (which, according to some meta-analytic estimates, explains 50 percent or more of the variance for both) compared to party support, where heritability only explains a few percent (Hatemi & McDermott, 2012; see also Dawes & Weinschenk, 2020). This implies that the choice of political party may be more volatile and more influenced by the environment, and, consequently, that the political system, media system, and social environment have a larger role to play when it comes to people's identification of parties, but not necessarily when it comes to their interest in politics or their preferred political ideology.

Nonetheless, which of the political preferences predicts media use is an empirical question that cannot be answered by mere adherence to predispositions alone without also taking into account some of the specifics of Sweden (since, for instance, heritability is also affected by the environment).

What's so Special about Sweden?

Selective exposure research has primarily been conducted in the United States,⁹ a country where the congress have been increasingly polarized since the 1970's (Thurber & Yoshinaka, 2015).

Sweden has some notable differences compared to the United States that may play a role in people's selection of media content. Sweden has a strong tradition of public service broadcasting, gives subsidies to the press, and has a multi-party system rather than a two-party system. All these factors might serve as an equalizing force against individuals' motivations and abilities, making both selective exposure and political polarization considerably less prevalent (e.g., Thórisdóttir, 2016; Trilling,

⁸ Because behavioral genetic studies typically split all variation into genetic variation and different kinds of environmental variation, these kinds of studies are useful to contribute to our understanding of where individuals have the largest room to influence media selectivity (and consequently where environmental factors may play a larger role). In other words, the larger the heritability, the larger the scope for individuals to choose what they want, all else being equal (see also York & Haridakis, 2020).

⁹ About 49 percent of selective exposure research has been conducted in the United States followed by 46 percent in Germany, according to one meta-analysis (Hart et al., 2009). Searching the Scopus database now shows that the United States dominates (58 percent), followed by Germany (10 percent) (n = 805 on 8 January 2020). This includes all selective exposure research, such as health communication, and not only political selective exposure.

Klingeren, & Tsfati, 2017). Furthermore, Sweden does not have many large partisan news outlets, and the news media audiences are often cross-cutting (see Figure 1.1). Daily newspapers in Sweden, for instance, primarily take a political stance on their editorial pages but typically lack the same stance in their news reporting. News reporting strives to achieve impartiality and journalistic objectivity, and some evidence suggests that there is no systematic partisan bias in news reporting (Asp & Bjerling, 2014; Nord & Strömbäck, 2018). More and more news sites, however, have emerged online even in Sweden with a focus on certain topics, and with a more or less explicit declaration of partisanship.¹⁰

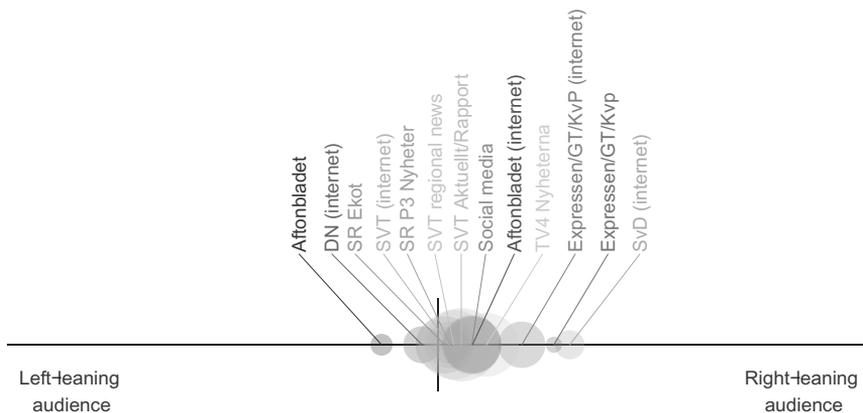


Figure 1.1: **Political leanings of some of the Swedish media audiences (averages)**. Note that people tend to flock around the middle. Bubble size indicates the proportion of the audience who use the media at least once a week, compared to those who use them more seldom. Data (n = 10,068) from the 2019 national SOM survey at the University of Gothenburg.

A recent study of polarization of political party followers on Twitter across 16 countries suggested that “polarization is the highest in two-party systems with plurality electoral rules and the lowest in multiparty systems with proportional voting” (Urman, 2020, p. 857). A similar study of twelve countries suggested that “news audience polarization is highest in the United States, and within Europe,

¹⁰ Such as ETC and Politism on the left, and Nyheter Idag and Samhällsnytt (previously Avpixlat) on the right. Politism has been discontinued, however.

higher in polarized pluralist/southern countries than in democratic corporatist countries” (Fletcher, Cornia, & Nielsen, 2020, p. 169). This gives an indication that the information and media environment could be important,¹¹ and we should not necessarily be easily persuaded that results from the United States are automatically transferable to Sweden or other countries. The United States may be considered an outlier, even though it is routinely used as a prototype for comparisons, especially when the mass media mirrors the political system, so the threshold for political polarization among the media audience could be lower (Brüggemann, Engesser, Büchel, Humprecht, & Castro, 2014). Furthermore, some evidence suggests that citizens in the United States have shown the largest drop in media trust over time (Hanitzsch, Van Dalen, & Steindl, 2018), which may also explain some of the polarization among news audiences. But if the high-choice media environment is actually driving polarization, rather than the country’s political system, then countries with high internet use, such as Sweden, could arguably be one of our prime suspects.

Sweden also values self-expression highly and is one of the most individualistic countries in the world (World Values Survey, 2018). The Swedish welfare system and social security also increase equal opportunities among citizens, which could make it easier for individuals to express their individuality privately with their personal information diet, even though Swedes may sometimes be consensus-oriented in social situations and publicly. Not to forget, Swedes are typically also very proficient in English,¹² which means they can access and consume English-speaking internet services and news. About 98 percent of Swedish households have internet access at home, and almost the same proportion of the population uses the internet (Davidsson, Palm, & Melin Mandre, 2019). Swedes therefore have a large set of opportunities enabling them to select media content, both from Sweden and from other countries, that is consistent with their individual beliefs and attitudes.

¹¹ Although studies with ecological correlations are volatile and may not reflect the true underlying cause.

¹² About 86 percent of Swedes say they speak English (Eurobarometer, 2012).

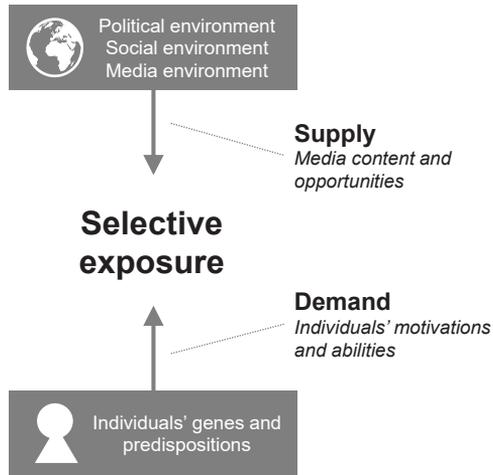


Figure 1.2: **Supply and demand factors.** An illustration of different factors that can interact with selective exposure, both at the individual level (genes and predispositions) and at higher levels (individuals' different environments).¹³ Selective exposure could consequently be considered a collider.

This means that the ability and motivation for media selectivity could be considerable in Sweden. On the other hand, public service broadcasting may play an important role in curtailing selectivity, as suggested by previous evidence (Bos, Kruikemeier, & de Vreese, 2016). Put differently, even if Swedish citizens show a significant demand for partisan news, it may not matter when the supply of partisan news is low. This point about the interplay between demand and supply, the individual and the environment, is illustrated in Figure 1.2. This figure also highlights the importance of the social environment for people's media consumption. Even though people may not have the ability and motivation—or even opportunity—to select content they agree with, this does not preclude that other people might push content their way, with advertisement probably being the most flagrant example (Huckfeldt, Mendez, & Osborn, 2004; Webster, 2014). Indirect influence may also increase when using the internet—more specifically, social networking sites, where information and content disseminates faster and further thanks to networks of

¹³ Genes and predispositions (or, in some cases, more precisely, genotypes and phenotypes) might not only be mediated such that genes affect predispositions which then affects the environment: it may also be the case that genes affect the environment which in turn affect the specific predisposition. A simple example would be a child prone to looking at violent movies, but who is repeatedly nudged into avoiding such movies by his or her parents until a new avoidance predisposition arise. In others words, multiple gene–environment interactions are possible.

people (e.g., multi-step flow of information).

Swedes' news consumption is primarily based on recurring routines and habits that could be described as stable (Wadbring, Weibull, & Facht, 2016). However, there have been some noticeable trends during the last decades, as is typical of many other countries around the world. Readership of print newspapers has declined steadily over time, while the corresponding online readership has increased (Andersson, 2017; Wadbring et al., 2016). In the 1980s, for instance, almost 90 percent of the Swedish population was estimated to read morning dailies (in print) on a regular basis, but in 2016 that readership was estimated to only 47 percent (Andersson, 2017). There is also some evidence suggesting that the gap between news seekers and news avoiders has increased, across a number of news sources from 1986 to 2010 (Strömbäck, Djerf-Pierre, & Shehata, 2013). This does not necessarily mean that Swedes abandoned news media all together: it could also be that their media consumption has partly shifted elsewhere, to some degree toward incidental news consumption via opinion leaders on social networking sites (Bergström & Jervelycke Belfrage, 2018) and through mobile news alerts (Newman, Fletcher, Kalogeropoulos, Levy, & Nielsen, 2017).¹⁴ In sum, this suggests that Swedish citizens have become more selective in their media consumption.

When it comes to selective exposure to information that supports an individual's preferences, there is also some evidence to suggest that Swedish citizens tend to prefer television interview shows with political party leaders they are inclined to vote for (Skovsgaard, Shehata, & Strömbäck, 2016). One important reason they watch the television news may be because of their political interest.¹⁵ The higher their interest, the more they watch interviews with party leaders from the opposing political side (Skovsgaard et al., 2016). The relationship between political interest and media use may be reciprocal (Strömbäck & Shehata, 2010), though public service may also help contribute to this relationship to some extent as well (Castro, Nir, & Skovsgaard, 2018). Similarly, about 10 percent of Swedes say that they use social networking sites to follow people with like-minded attitudes (Nord & Strömbäck, 2018, p. 70). On the other hand, a minority of Swedes (about 22 percent) have said that they avoid news (Newman, Fletcher, Kalogeropoulos, & Nielsen, 2019; see also Matsa, Silver, Shearer, & Walker, 2018), primarily because the news affects their mood negatively,

¹⁴ About 22 percent of the Swedes said that they received news via mobile alerts "in the last week", according to one survey (Newman et al., 2017, p. 18).

¹⁵ The different media consumption among different Swedish party supporters, in general, might also partly be explained by different levels of media trust among political groups (Andersson & Weibull, 2017).

and more recent estimates suggest that about 16 percent of Swedes avoid information that challenges their views, at least when they self-report (Dahlgren, 2020).¹⁶

In summary, Sweden is a somewhat paradoxical case to study with its public service broadcasting and, at least historically, low audience fragmentation, which may decrease both selective exposure and political polarization. On the other hand, evidence seems to indicate that Sweden also has very high individualism combined with a welfare system and almost complete internet penetration, which may lower the threshold for increased selective exposure based on political preferences, and, in turn, political polarization. Although the exact nature of the media system, political system, and people's social networks is beyond the scope of this thesis, a likely outcome of today's media environment is not an extremely strong influence on media selection at the individual-level, but perhaps instead a stronger interaction between individual-level political predispositions *and* the environment. Sweden may therefore be a relevant case for a study on selective exposure and political polarization. A narrow focus on nation states, however, may be risky, given that English-speaking content could easily travel across borders via the internet. The specifics of a country may therefore play less of a role when people also have the opportunity to seek (and to be exposed to) any arbitrary online content. One should also be cautious about singling out one or two factors that differ between countries, simply because there are an infinitive number of factors that could differ depending on the perspective one takes, and it may be hard to foresee which of the factors contribute to selective exposure by mere ecological correlations alone.

¹⁶ In contrast, a majority of Swedes (about 63 percent) estimate that *other* people avoid supporting information more than they themselves do (Dahlgren, 2020).

2 Selective Exposure and Political Polarization

Selective exposure usually means that people select content or information that matches their beliefs or attitudes. This selection can also occur at different levels and for different reasons, as we shall see in this theoretical chapter.

Selective exposure, in a broad sense, can mean “any systematic bias in audience composition” (Sears & Freedman, 1967, p. 195). This broad definition primarily deals with description, and does not say much about the causes of the audience composition or why individuals select content. We can consequently use a number of theories to explain why selective exposure may occur (Knobloch-Westerwick, 2014). Cognitive dissonance has probably been the most common explanation (e.g., Cotton, 1985), even though recent work has emphasized motivated reasoning explanations in which people use selective exposure to defend their existing beliefs and attitudes (e.g., Hart et al., 2009; Kunda, 1990; Taber & Lodge, 2006).

Selective exposure, in the broad sense, is a bias insofar as what people select differs from the available messages, and Freedman (1965) even proclaimed that selective exposure “must be defined in terms of deviations from a baseline determined by information availability” (p. 80). Although this is a description on the aggregate level, for an individual this could be interpreted as meaning that if there are a hundred news articles, half of which are left-leaning and half right-leaning, an individual—let us call her Alice—would engage in selective exposure if she selected anything other than an equal ratio of articles. Selective exposure, in other words, requires variation. This also means that when only one type of content is available, such as left-leaning news articles, there is little possibility of selective exposure. So far, so easy.

As the research has evolved over time, however, the emphasis has shifted somewhat toward how some type of preference (e.g., predisposition) *causes* a particular choice. In this sense, selective exposure is considered synonymous with confirmation bias, or the tendency for people to seek information that aligns with

their attitudes, beliefs, or behaviors (e.g., Stroud, 2010; Nickerson, 1998).¹⁷ These two different ways of looking at selective exposure are illustrated in Figure 2.1. For Alice there would be four possibilities. She can select news that supports her beliefs (confirmation bias); she can select news that challenges her beliefs (disconfirmation bias); she can select both; or she can select none (Frey, 1986).

Now things become harder. Information can support or challenge an individual's existing attitudes or beliefs (apart from being neutral). What counts as supporting information for me may not be the same for you. This is important to spell out explicitly because it means that there is likely no such thing as supporting information in and of itself. Supporting information may only exist in relation to a specific individual. Selective exposure theory is therefore primarily an individual-centric theory at its core (in the narrower sense of confirmation bias).

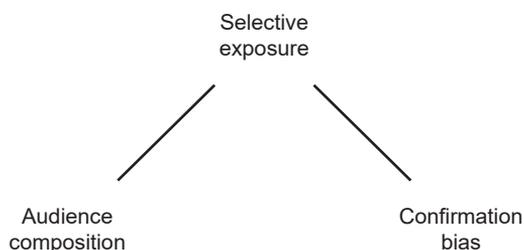


Figure 2.1: **The selective exposure concept.** The concept of selective exposure is sometimes described as any bias in the audience composition, or more specifically as a confirmation bias (e.g., motivated selection of media messages that match one's beliefs). This thesis focuses primarily on confirmation bias.

¹⁷ The term “confirmation bias” often denotes similar, but sometimes also different, phenomena with respect to psychology (e.g., less conscious one-sided case-building and biased search and interpretation of evidence), as well as philosophy and logic (e.g., verificationism and falsificationism). See, for example, Nickerson (1998) and Poletiek (2001) for discussions. A third alternative is that confirmation bias is a rhetorical strategy that one can use to discredit other people's arguments as biased, but this is beyond the scope here. I refer to confirmation bias in terms of *selecting* information that matches a prior attitude or belief, unless stated otherwise. This is because the “term confirmation bias in information search [...] is preferred here and helps to avoid confusion with the broader notion of selective exposure” (Knobloch-Westerwick, 2014, p. 136, see also p. 6). This is likely common practice in selective exposure research: “Historically, scholars commonly used the term selective exposure to denote a confirmation bias (e.g., Sears & Freedman, 1967); contemporary work often labels any possible bias with selective exposure” (Westerwick, Sude, Robinson, & Knobloch-Westerwick, 2020, p. 2). “Since Lazarsfeld, Berelson, and Gaudet (1944) coined the term selective exposure, it has often been used to describe the phenomenon that information users prefer attitude-consistent messages over attitude-discrepant messages. A more specific term for this pattern is confirmation bias” (Knobloch-Westerwick, Mothes, Johnson, Westerwick, & Donsbach, 2015, p. 489). In other words, selective exposure in the narrow sense of confirmation bias is of most importance here, because this thesis deals with political preferences causing selections (and not bias in audience composition).

Furthermore, Alice can be exposed to content that confirms her beliefs or attitudes without selecting anything herself. For instance, Bob may share a news article with her. This is not a confirmation bias, because it is not Alice who selected the content but rather a consequence of the particular environment Alice happened to inhabit. This form of incidental exposure, or *de facto selective exposure* (Sears, 1968), has been introduced to explain why people are sometimes exposed to content they agree with even though they have no motivation to select it. While incidental exposure can come in many forms,¹⁸ a relevant example is when people are exposed to television news shows after their favorite entertainment show ends (e.g., Prior, 2007), or when they habitually scroll through their news feeds on social networking sites (e.g., Messing & Westwood, 2014).

Apart from the fact that selective exposure requires a choice on part of an individual (Knobloch-Westerwick, 2014, p. 110), some of the core tenets of selective exposure have remained the same throughout the years, and an early review by Sears (1968) pointed out the following propositions: “(1) people seek supportive information; (2) people avoid nonsupportive information; (3) both tendencies occur more frequently with greater cognitive dissonance; and (4) both tendencies occur more frequently when the individual has little confidence in his initial opinion” (p. 777).

The evidence back then, however, “did not favor any of these four propositions” (Sears, 1968, p. 777). Instead, people often preferred information that went *against* their opinions (Freedman, 1965). In other words, evidence for both selective exposure and selective avoidance was scarce. The theoretical development went stale after these pessimistic reviews (Cotton, 1985; Frey, 1986), but later methodological advancements in primarily statistical theory such as meta-analysis have provided some support for at least the first proposition (D’Alessio & Allen, 2006; Frey, 1986; Hart et al., 2009), although not the other three to the same extent (e.g., Garrett, 2009; Frey, 1986). As internet and social networking sites have become part of everyday life, empirical research on selective exposure has been reinvigorated and theoretical developments once again kicked off. Later developments, most prominently by Knobloch-Westerwick (2014), have further explicated the theory (see the five propositions in Knobloch-Westerwick, 2014, p. 3, which I do not have room to discuss here).

¹⁸ E.g., *news finds me perception*, which is the “perception that one will remain well informed through peers and online social networks” (Gil de Zúñiga & Diehl, 2019, p. 1254).

People's tendency for selective exposure may not be particularly strong, with a small to medium effect size (Cohen, 1988). The average meta-analytic effect size for selective exposure is Cohen's $d = 0.36$ for information in general, and Cohen's $d = 0.46$ for political information in particular, according to one study (Hart et al., 2009).¹⁹ Translating this effect size to a more meaningful number, we can say that people are, on average, almost two times more likely to select supporting information rather than challenging information.²⁰

However, statements such as “on average” or “everything else being equal” may construe a theoretical picture that has little to do with reality. After all, if you put your head in the oven and your feet in a bucket of ice, you may, on average, feel comfortable. In other words, everything else may not be equal, and this can cause problems when abstract research findings are translated into policy decisions or discussions about specific individuals.²¹ Therefore, it may also be useful to consider circumstances where selective exposure may vary, and one could say it varies depending on who the individual is, what choice the individual is faced with, the type of information that is available, and variations in the situation and environment (for summaries of moderators, see Hart et al., 2009; Smith, Fabrigar, & Norris, 2008). This should not be forgotten, because one could argue that average individuals or average effect sizes do not exist in the real world—they are abstractions based on particular methods that studied particular people under certain conditions, which limits both the people and situations about which one can make inferences. Consequently, selective exposure could be much greater than the average meta-analytic effect sizes suggest in some situations and much lower in other situations (after all, the size varied from a Cohen's d of -1.5 to 3.3 in Hart et al., 2009). This also has consequences for how selective exposure is studied. To put it differently:

we argue that no one approach to studying selective exposure is superior and that it is not possible to arrive at a single estimate of the extent to which selectivity occurs, because the behavior is contextual. Certain real-world contexts will

¹⁹ Cohen's $d = 0.36$ and Cohen's $d = 0.46$ is equivalent to Pearson's $r = 0.18$ and Pearson's $r = 0.22$, respectively. Similarly, D'Alessio and Allen (2002) found the average meta-analytic effect size of selective exposure to be Pearson's $r = 0.22$. They did not estimate publication bias, but Hart et al. (2009) did and found no evidence of publication bias using funnel plots, although funnel plots are not perfect (Lau, Ioannidis, Terrin, Schmid, & Olkin, 2006).

²⁰ Odds ratio of 1.92, converted from Cohen's $d = 0.36$ (Hart et al., 2009). Confirmation bias (defense motivations) accounted for about 13 percent of the variance in selective exposure, and accuracy motivations accounted for about an additional 7 percent (Hart et al., 2009).

²¹ E.g., ecological fallacy or fallacy of division (Järvä & Dahlgren, 2013).

inspire more selectivity than others [...] Likewise, certain designs will elicit more selective exposure than others. Thus, the researcher must make methodological decisions a priori about the sort of exposure that is of interest. (Feldman, Stroud, Bimber, & Wojcieszak, 2013, p. 173)

There are several ways in which selective exposure can be increased methodologically (Clay, Barber, & Shook, 2013; Feldman et al., 2013; Smith et al., 2008)—for instance, by excluding participants with moderate viewpoints, removing entertainment alternatives, forcing participants to choose between alternatives (when, in reality, they can choose all), displaying alternatives in series rather than parallel, and so on. What this means is that it can be very easy both to exaggerate and to underestimate the tangible consequences of selective exposure in a given situation, and so there is great uncertainty to what extent selective exposure occurs in a given situation, even though the overall number of choices in the media environment could be high. This is one important reason why a focus on high abstraction levels, such as country-level selective exposure, is not particularly relevant (at least, in the narrow sense of confirmation bias).

Selective Exposure from Top to Bottom

Regarding abstraction levels, the most basic first step in selective exposure is that you have to be physically present in a certain space and time and direct your senses—listen to what people are saying or attend to a television newscaster.²² This is sometimes influenced by everyday trivial matters such as where you live, which languages you can understand, what information sources you tend to select, and so on.

The selection of media content can further be carried out at several levels (Knobloch-Westerwick, 2014, p. 12). Going directly to a newspaper website may offer different choices of news articles compared to going to a social networking site to select news articles. For example, reading an online news article could concern choices of

1. *medium*: e.g., using the internet (instead of television)

²² Selections can also occur in many different ways (e.g., seeking or avoiding information; doing it actively or passively, permanently or temporarily, weakly or strongly, as well as consciously or unconsciously; Sweeny, Melnyk, Miller, & Shepperd, 2010). There are also further cognitive levels (e.g., selective attention, encoding, retrieval, and behavior; see Garrett, 2008), but these are beyond the scope of this thesis.

-
2. *channel*: e.g., news site
 3. *outlet*: e.g., Dagens Nyheter
 4. *editorial unit*: e.g., sports section
 5. *information unit*: e.g., table with football results

Selective exposure research sometimes uses the outlet level as a proxy for the content people are selecting, such as left-wing or right-wing newspapers (Clay et al., 2013, p. 165). Consequently, such research may not even be able to answer the question of whether people are exposing themselves to content that supports their beliefs or attitudes. This is sometimes assumed, not demonstrated, which onlookers could say is highly embarrassing because selective exposure theory (in the sense of confirmation bias) may be severely underdetermined by data (Stanford, 2017). For example, if left-leaning Alice prefers Aftonbladet, whose editorial leans left politically, it does not necessarily mean that Alice reads the editorial. She might only be interested in the sports section. Research on the outlet level, therefore, often risks giving a precise answer to the wrong question.²³

Measurement at the outlet level may also create another problem, where researchers impose interpretations on the audience, since selective exposure “may be misinterpreted to the extent that participants’ impressions of actual information content do not align with researchers’ a priori categorizations of the media outlets” (Clay et al., 2013, p. 165). In short, it could be a mismatch between what participants are *actually* doing and what researchers *think* that they are doing. This would also suggest that the extent of selective exposure may be either underestimated or overestimated by studies that focus on the outlet level or channel level, at least when they try to estimate if people only read news that supports their beliefs.

Research using surveys or panels that ask questions about the use of newspapers (at the outlet level) cannot say a tremendous amount about what people select within those newspapers. In other words, these studies are sometimes based on the assumption—the auxiliary hypothesis—that selective exposure exists on the article level and can be revealed by analyzing the outlet level.²⁴ This is borderline circular reasoning, unfortunately, because one may assume what one is purporting to test. As

²³ As John Tukey put it, it may be far better to have “an approximate answer to the right question, which is often vague, than an exact answer to the wrong question, which can always be made precise” (Tukey, 1962, p. 13).

²⁴ Meehl (1997) has a convenient summary of how auxiliary theories relate to the substantive theories in causal claims: $T \wedge A_x \wedge C_p \wedge A_i \wedge C_n \vDash (O_1 \rightarrow O_2)$, where T is the main substantive theory of interest; A_x is the auxiliary theories relied on in the experiment (e.g., probability sampling); C_p is the *ceteris paribus* clause (“other things being equal”); A_i is instrumental auxiliaries—devices relied on for control and observation (e.g., survey items); C_n is realized particulars—conditions were as the experimenter reported (e.g., researcher telling the truth); and O_1, O_2

Knobloch-Westerwick (2014) argues, experiments are superior in this regard because one can see (and test) what content people are actually selecting, which is often the point of selective exposure research in the first place (at least in the sense of confirmation bias). This does not necessarily mean that we should abandon certain methods from our toolbox, but rather that we should align our understanding of what they actually measure, and adjust our conclusions and inferences accordingly. But it may also mean that certain selective exposure findings may overestimate or underestimate the true nature of selective exposure.

Political Polarization

When we talk about political polarization, we typically refer to the measured distance between two things, such as ideology, and whether people have diverged from each other on the measurement.²⁵ In the political context, for example, one could talk about group polarization (e.g., Isenberg, 1986), elite polarization (e.g., Druckman, Peterson, & Slothuus, 2013), mass polarization (e.g., Lelkes, 2016), affective polarization (e.g., Iyengar, Lelkes, Levendusky, Malhotra, & Westwood, 2019), belief polarization (e.g., Jern, Chang, & Kemp, 2014), perceived polarization (e.g., Yang et al., 2016), fact polarization (e.g., Kahan, 2015), geographic polarization (e.g., Fiorina & Abrams, 2008), and so on. These examples highlight where polarization takes place, and by whom.

Polarization can also be thought of as both a state and a process (or trend). It is a state when Alice and Bob are far away from each other on the issue of abortion, for example, and it is a process if they move away from each other even further. If we freeze a specific moment in time, as in a cross-section, we will likely find evidence of polarized citizens by the mere fact that we have different opinions or parties. This is to be expected, since parties would serve little purpose if they were not polarized on at least one issue. The main focus here is therefore whether polarization changes over time, and whether selective exposure is driving that process.

One could also talk about different kinds of polarization (Wojcieszak, 2015). I

are observations or statistical summaries of observations (e.g., independent and dependent variables). In other words, this relates to the Duhem–Quine thesis that no theory can be tested in isolation, without auxiliaries; and the more auxiliaries, the more uncertain the substantive theory becomes.

²⁵ There may not be much to say theoretically about polarization in and of itself. The polarization concept could therefore suffer, to some extent, from operationalism, in which the measured distance itself becomes the sole meaning (Chang, 2019). This is not to say that polarization is not well theorized or studied within different topics, subject areas, or theories.

have already mentioned polarization, or more specifically *divergence*, when people move toward opposite extremes.²⁶ *Sorting*, on the other hand, refers to when individuals become more consistent in several of their attitudes (Figure 2.2). Put differently, when sorting occurs, attitudes or beliefs concentrate to a specific point so that the attitudes and beliefs are consistent (it is therefore sometimes referred to as *ideological consistency*). For example, Alice could align her attitudes on abortion, property rights, and economic redistribution to a particular party (e.g., Left Party). When all those attitudes are consistent with each other, we could consequently talk about a high degree of sorting (at the individual level in this case, but also at the population level).

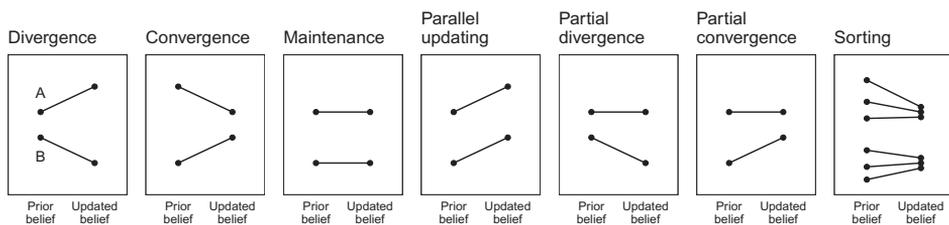


Figure 2.2: **Belief updating.** An illustration of the different ways two individuals (A and B) may update their beliefs or attitudes. Sorting refers to how multiple beliefs or attitudes align or group together. Partly adopted from Jern et al. (2014).

Although the focus is on polarization (i.e., divergence) in this thesis, sorting is important to mention because it is sometimes confused with polarization. For example, there has been some debate as to whether citizens are polarizing, especially in the United States. While some journalists and mass media attest to significant polarization among citizens in the society, the evidence suggests stability in ideology or attitudes among citizens (Abrams & Fiorina, 2015). Using data from American National Election Studies (ANES), some have found that “the American public as a whole is no more polarized today than it was a generation ago, whether we focus on general ideological orientations or positions on specific issues” (Fiorina & Abrams, 2008, p. 584). This might be due to confusion about the terms: polarization may be unusual, but sorting could be more common, and there is some evidence to indicate that sorting occurs in the United States (Abramowitz & Saunders, 2008; Abrams &

²⁶ Conversely, if they instead move toward each other we could say that they *converge*. In this thesis I always mean diverge when I use the term “polarization”.

Fiorina, 2015; Fiorina & Abrams, 2008; Lelkes, 2016). In other words, one could say that citizens in the United States have aligned several of their attitudes to their party, rather than becoming more extreme in what they already believe. This has led to less overlap: fewer liberals are members of the Republican party, and fewer conservatives are members of the Democratic party. One could say that they become more pure.

Similar patterns are noticeable in Sweden. Many ideologies and issue attitudes are stable over time, and only a few issues are polarized, or have become more polarized over time (such as immigration and multiculturalism), whereas sorting is more common (Oscarsson, 2017, see also Figure 2.3). Parties, on the other hand, seem to be sorting into a left and right block (Oscarsson & Holmberg, 2016). But parties can also emerge and cater to those attitudes or beliefs that are not represented by the current political parties (see also Bischof & Wagner, 2019), which may be the case with newer Swedish parties such as New Democracy, Pirate Party, Feminist Initiative and Sweden Democrats.

Sorting and polarization could consequently be seen as two different and independent phenomena, so that one can have sorting without polarization, and vice versa. They are typically studied among groups of people (often Democrats and Republicans), but it is nonetheless possible for any entity to sort, such as two or more individuals, groups, or countries.²⁷ Two individuals could align several of their beliefs and attitudes toward two opposing parties. Similarly, a single individual could sort or polarize over time (or in relation to a normative ideal).

Political polarization on the individual level involves some sort of belief or attitude change, which is sometimes postulated as different from *reinforcement*, which typically involves strengthening an already existing belief or attitude (e.g., Alice more intensely identifies as left-wing). However, this distinction is perhaps not as sharp as one might suspect, since the distinction could easily disappear if we consider that reinforcement is a change in belief strength. And since a belief can change in strength, it can consequently polarize. Reinforcement is therefore not necessarily distinct from polarization. Alice, for example, may not budge a millimeter in her belief in women's right to abortion, but her belief could strengthen when she talks to Bob, who is against abortion, thereby polarizing both Alice and Bob's belief strengths. Consequently, the distinction between reinforcement and polarization could be given less emphasis.

²⁷ When polarization occurs between two individuals, some have called it *pairwise* polarization, whereas polarization at the aggregate level (e.g., country) can be referred to as *population* polarization (Benoît & Dubra, 2019).

Ideological and Affective Polarization

The question of how selective exposure affects political polarization is at the center of this thesis, but I have yet to say what the political issue or subject is that is actually polarizing. For the sake of triangulation, I focus on several outcomes of polarization, namely ideological polarization and affective polarization, and how these change over time. These are likely two of the most commonly studied types of polarization (Lelkes, 2016), and for good reason.

Ideological polarization refers to changes in ideological leaning, such that Alice and Bob move further away (diverge) from each other (or are already far from each other) on the political left/right spectrum. Ideological polarization among party supporters in the Swedish population is not particularly significant, according to some estimates, but rather fairly stable (see Figure 2.3).²⁸ As we can see from the bottom part of the figure, the effective number of parties (a measure that takes the relative size of each party into account; see Laakso & Taagepera, 1979) shows that citizens have a higher number of parties to choose from, during later years, which can help exacerbate ideological polarization.

Affective polarization, on the other hand, is the extent to which people like or dislike their political opponents. Just like ideological polarization, affective polarization is not particularly significant in the Swedish population over time (see Figure 2.4),²⁹ though it is apparent that citizens tend to like those parties that are closest to them (see also Renström, Bäck, & Schmeisser, 2020). Sweden Democrats (SD) are an exception, being the most disliked party among citizens, at least among those who lean left.

Although Figure 2.3 and Figure 2.4 seem to indicate that ideological polarization and affective polarization are not increasing, or even changing much over time, these are nonetheless cross-sectional analyses of averages among the whole Swedish population. As a thought experiment, if people who lean left suddenly switched place with people who lean right, this would go completely unnoticed in a cross-sectional analysis (at least if the proportions stay the same). Furthermore, these figures say very little about how specific media use causes attitudes or beliefs to change (and how attitudes cause selection of media content).

²⁸ Note, instead, the extent to which the party supporters have sorted themselves into two blocks over time, the left (V + S + MP) and the right block (C + L + KD + M).

²⁹ The affective polarization in the United States, however, has been increasing since the 1970s (Iyengar, Sood, & Lelkes, 2012).

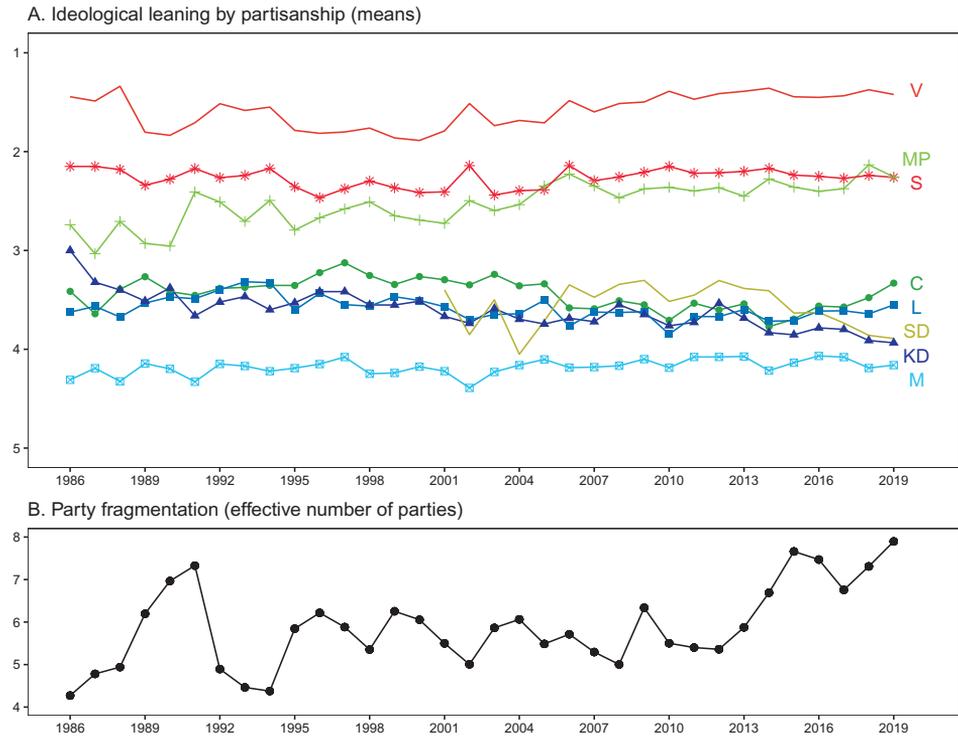


Figure 2.3: **Ideological polarization over time.** Top panel (A) shows ideological leaning (left/right, 1 to 5, means) among Swedish party supporters from 1986 to 2019. V = Left Party; MP = Green Party; S = Social Democrats; C = Centre Party; L = Liberals; SD = Sweden Democrats; KD = Christian Democrats; M = Moderate Party. Bottom panel (B) shows the effective number of parties as an indicator of party fragmentation.³⁰ Data (n = 125,242) from the national SOM surveys at the University of Gothenburg.

Ideological leaning and affective polarization are the most relevant types of polarization here, firstly because ideological leaning is a prominent part of Swedish politics (Oscarsson & Holmberg, 2016), and secondly because they are likely highly heritable (Dawes & Weinschenk, 2020; Hatemi & McDermott, 2012) and might therefore guide content selection and withstand persuasion from opposing viewpoints. When it comes to social networking sites, people are exposed to more emotionally loaded content than in news articles from the mass media (Crockett,

³⁰ Thanks to Staffan Betnér for bringing this measure to my attention.

2017), and a casual stroll through a Facebook or Twitter feed would likely easily confirm this observation. Exposure to anger and outrage may therefore be more easily come by on social networking sites (Crockett, 2017), and opportunities for affective polarization may consequently be greater.

Measuring how polarization changes, regardless of type, is easy in theory but difficult in practice. Floor and ceiling effects sometimes occur in polarization research, since some people are already at the extremes so that any further change is not possible to capture (Wojcieszak, 2015). This could be problematic, because selective exposure is often found among the fringes rather than among the average Joes, and even more so when the average Joe's are removed from the analysis, which happens (Feldman et al., 2013). Questions such as "how much did your attitude change?" are better suited to handle floor and ceiling effects, but have their own problems in estimating the size of the change when individuals' subjective interpretations are compared.

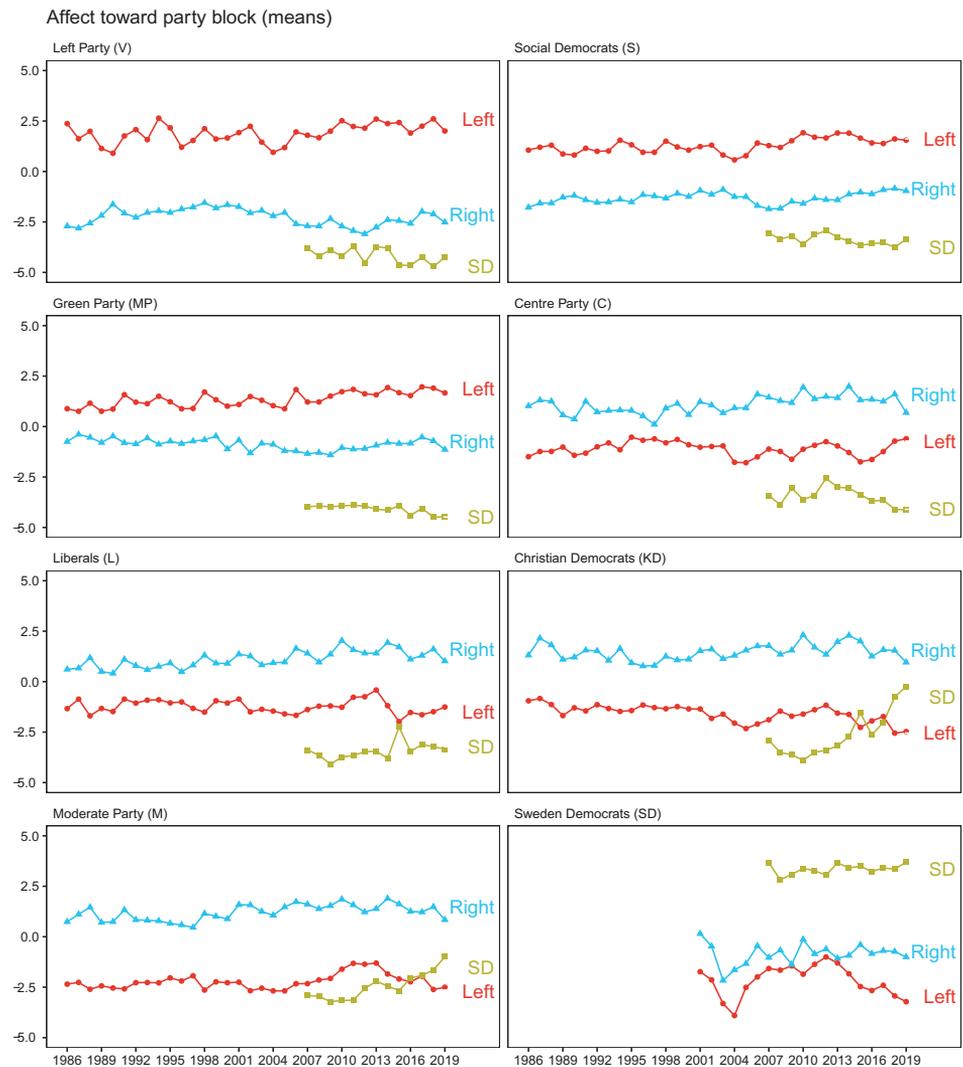


Figure 2.4: **Affective polarization over time.** The degree to which party supporters like or dislike (means, from +5 to -5) the left block (V + S + MP) and right block (C + L + KD + M), as well as SD on its own, from 1986 to 2018. Party blocks are presented instead of parties to increase clarity. Data (n = 143,290) from the national SOM surveys at the University of Gothenburg.

In summary, polarization is to a large degree a descriptive phenomenon that is more or less inferred directly from the measurement itself. Whether or not polarization occurs is also debatable, since some evidence suggests stability, and that polarization is limited to a few issues or places. Sorting, on the other hand (wherein people align or concentrate multiple beliefs or attitudes to a single point), is probably more prevalent and may have increased over time (in Sweden) on some issues. However, we nevertheless have little evidence of how, when, and why polarization occurs after exposure to media messages in particular, and we know even less of how it may occur during selective media exposure.

To summarize the entire theoretical chapter, including political polarization and selective exposure, there are three political preferences intended as predictors of selective exposure (i.e., political party, political interest, and ideological leaning), alongside the different political polarizations (i.e., ideological polarization and affective polarization). The relationships between these concepts are summarized in Figure 2.5.

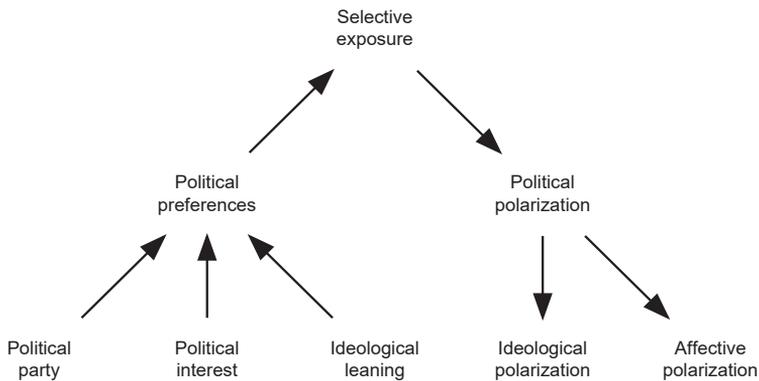


Figure 2.5: **Overview of main concepts.** Main concepts in focus in this thesis, and their relationships.

Purpose and Research Questions

Thus far, I have talked about the number of information choices that have seemingly increased for people, and how media effects are more likely conditional than ever before. This would suggest that people can make their own political preferences—e.g., ideological leaning, political interest, and political party—become the criteria for selecting media content, and that media content could further polarize individuals so that their political preferences (most notably ideological leaning) would become more extreme.

The question of whether people are insulating themselves more and more from other people’s viewpoints at the expense of increasing political polarization, and whether people seek information that supports their existing beliefs and attitudes to a higher degree than before, is one of the most pressing issues of our time. The purpose of this thesis is therefore to *investigate the relationship between selective exposure and political polarization*, especially at the individual level since selective exposure is an individual-level theory in the sense of confirmation bias, as well as how this relationship changes over time (Figure 2.6).

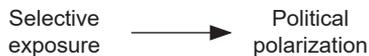


Figure 2.6: **Causal diagram.** Causal diagram of the focal relationship of this thesis.

Our knowledge on how selective exposure (or *any* media use for that matter) leads to political polarization is limited. One could say that there are two key problems in previous research (Prior, 2013). First of all, the causal direction is somewhat unclear. While some evidence points to the idea that selective exposure leads to polarization (e.g., Stroud, 2010), other evidence does not (e.g., Trilling et al., 2017). A recent review concluded that the “evidence for a causal link between more partisan messages and changing attitudes or behaviors is mixed at best” (Prior, 2013, p. 101). One way to address this issue of causality is to take a longitudinal perspective in order to see how the process unfolds over a significant period of time. An even better approach, perhaps, is to think in terms of a reciprocal relationship, where exposure leads to polarization and polarization leads to exposure, and so forth. This leads to the first research question:

RQ1: How has the relationship between different political preferences and selective media use changed over time among the Swedish population?

The second problem more specifically concerns the causal process (or mechanism) of polarization. Even if we assume unidirectional causality (selective exposure → political polarization), we still have little knowledge of how polarization would occur, especially psychologically within individuals (Prior, 2013), despite the countless examples of polarized citizens, elites, and media audiences (e.g., Arceneaux & Johnson, 2015a; Druckman et al., 2013; Valdesolo & Graham, 2016).³¹ The specific mechanism by which polarization occurs may therefore require a more elementary question that focuses more heavily on theory:

RQ2: Does selective exposure lead to political polarization, and if so how?

One way to examine how selective exposure leads to polarization is simply to suggest and test a specific mechanism. I will therefore devote time to that task, apart from the previous question of how this relationship may change over time.

Although these two questions may overlap to some degree, they could also be seen to operate at different levels of selective exposure, where the latter research question is more micro than the former.

³¹ When it comes to this thesis, my focus is on Swedish citizens in general. Although I do not discuss my views on the role of the audience (such as active or passive, etc.), I refer to the discussion in Knobloch-Westerwick (2014) which basically says that an audience may not need to be active media consumers (as in the uses and gratifications theory), but might be passive and rely on heuristics when consuming information (as in dual process theories). This might be surprising given a theory such as selective exposure, which almost seems to imply an active media consumer.

3 Article Summaries

Three articles are the backbone of this thesis. Here, I will summarize them, as well as some of the reasons for choosing the specific methods.

Longitudinal methods and experiments are likely best suited for this thesis because the underlying assumption is that the new media environment, with gradually increasing choices, results in a corresponding increase in selectivity and polarization among citizens. If the selectivity and polarization does not increase as expected over time, then we have contrary evidence which could suggest that the primary culprit is not the number of options available to citizens.

When it comes to the different levels of selective exposure, I have primarily studied selective exposure at a somewhat high level of abstraction (the medium and outlet level in article I and article II) using longitudinal surveys, and at lower levels of abstraction (informational level) using an experiment. Similarly, polarization is studied at the population level (article I and article II) as well as within groups and individuals (article II and article III). This has consequences for the inferences that can be made, because a narrow definition encompasses fewer instances and is consequently less generalizable, and vice versa (Clay et al., 2013; Järvå & Dahlgren, 2013, p. 221).

Eliminating participants with moderate views (such as independents) from the analyses in order to find strong evidence of selective exposure may be beneficial, and perhaps even common (see Clay et al., 2013; Feldman et al., 2013).³² I have tried not to do so, however. The goal is to examine whether more choice has increased selective exposure and political polarization among the many, not whether the most extreme people are getting more extreme. Therefore, the inferences made are primarily about the general (Swedish) population, rather than any subpopulation.

Surveys has their benefits, but rest on an assumption that one has been able to capture a concept adequately with questions and (for longitudinal surveys, as in articles I and II) that the concepts retain the same meaning over time. I have used

³² For instance: “excluding moderates from the analysis and also confining subjects’ choices to political news stories produced the largest estimate of the frequency of selective exposure” (Feldman et al., 2013, p. 184).

standardized questions whenever relevant (in the experiment in article III), but there are no safeguards in inductive reasoning. Surveys are therefore part of the operationalized concept (Shadish, Cook, & Campbell, 2001), and different methods will inevitably yield somewhat different results (though they may be small or even miniscule). Selective exposure experiments, furthermore, are highly sensitive to different methodological choices (Feldman et al., 2013), as discussed earlier, and it is therefore important that those methodological choices are spelled out and discussed explicitly. That is why I will spend some effort discussing the methodological details of each article, because methods are to some extent intertwined with theory (Shadish et al., 2001).

The methods here are probably the worst methods I could have chosen, except for everything else. My initial thoughts about studying Facebook or Twitter content using social network analysis, for instance, were quickly shattered after contemplating causality. To study only content means a detrimental tradeoff: one cannot see into the minds of people and what they prefer, but only their materialized choices.³³ However, it is important to understand how preferences *cause* choices in order to study selective exposure, and not simply assert that content that is selected (or shared online) is done so because people have a preference for it. Experiments are therefore used to explore the (psychological) process from selective exposure to political polarization, whereas longitudinal surveys are better suited for changes over time.

Next I will present each article with a brief summary and discussion, as well as causal diagrams indicating the aspect of the focal relationship that the article is about. In general, the first two articles answer the first research question (the relationship between selective exposure and political polarization over time), and the third article answers the second question (whether and how exposure leads to polarization), though they overlap to a substantial degree.

Article I. Selective Exposure to Public Service News over Thirty Years: The Role of Ideological Leaning, Party Support, and Political Interest

- *Publication:* Dahlgren (2019).
- *Purpose:* To provide a comprehensive longitudinal study of selective exposure to public service news and its antecedents.

³³ Choices and preferences are two different things: preferences might not always cause choices, and preferences cannot not always be inferred from choices (Hansson & Grüne-Yanoff, 2012).

-
- *Method:* Longitudinal cross-sectional survey (n = 103,589) with mixed-effects modelling
 - *Main finding:* People with a strong political interest continue to use public service news despite a small overall decline in use, and no particularly large differences between ideological leanings or majority of political parties.
 - *Open data and materials:* Full analysis script available at the Open Science Framework (<https://doi.org/10.17605/osf.io/pa3me>). Data available at Swedish National Data Service (<https://doi.org/10.5878/002896>).



Figure 3.1: **Focal relationship.** Causal diagram of the relationship between political preferences and selective exposure.

Do people still use mass media, or have they left it for more niche news media? And, more importantly, which political preference predicts the use of public service news? In this empirical article, I look into how Swedish citizens have used public service news over three decades—both from Swedish Television (SVT) and Swedish Radio (SR)—every year from 1986 to 2015. Public service broadcasting, and its news, strive to be non-partisan and reach the entire population.

Three different predictors are considered: ideological leaning, political interest, and political party. Although there is a small general decline in public service news use over time, the decline is not as steep among all groups of people. For starters, whether people are on the political left or right does not seem to make any difference for their news consumption, but the intensity of the leaning may do so under certain circumstances.³⁴ This means that selective exposure should not be overstated as a general phenomenon among all people, but is rather limited to certain groups.

Those who do not support a party in the Swedish parliament (Riksdagen) use public service news somewhat less over time as well. There is also evidence to suggest that the use of public service news is actually *increasing* among supporters of

³⁴ Those who lean only slightly (rather than clearly) to one direction or the other are more likely to use public service news, after controlling for several variables.

Sweden Democrats (which entered parliament in 2010), which has occurred alongside the party gaining influence in the parliament.

Most notably, those who have a strong political interest are more likely to use public service news consistently over time, while those who lack political interest tend to decrease their use. This is one of the most important findings, not only since political interest may be less easily changed by environmental influences compared to other preferences, but also because political interest is an intrinsic motivation, indicating that news is something that people use for its own sake.

On a methodological note, the data are based on the national SOM survey, which is a yearly survey carried out by University of Gothenburg on a representative cross-section of the Swedish population. The proportion of individuals who have high political interest has increased substantially over the last surveyed years (see article appendix), which may bias the results. For instance, others have found that the response rate “is correlated with political engagement, and political engagement is correlated with measures of polarization” (Cavari & Freedman, 2018, p. 724). This means that these results may partly be an artifact of a systematic bias, that people who like politics are more likely to answer surveys, which should be considered when interpreting the results.

Furthermore, the article primarily relies upon exploratory analyses. For example, the cutoff threshold for media use (at least five days per week) in the descriptive parts of the article are arbitrary. Different cutoffs naturally yield different results and this particular cutoff was chosen with the intention to have enough variation in the variable levels. In other words, the cutoff was a data-driven choice. Due to time constraints, I did not do a specification curve analysis or multiverse analysis (Simonsohn, Simmons, & Nelson, 2015; Steegen, Tuerlinckx, Gelman, & Vanpaemel, 2016), which would otherwise be useful to figure out how different cutoffs, as well as other modelling choices, would affect the results. Nor did I plan my analyses in order to control for false positives, although I controlled the false discovery rate to some extent (Benjamini & Hochberg, 1995).

In summary, the main conclusion is that selective exposure does not seem to vary between the political left or right, nor between most of the political parties—at least not to any substantial degree when looking at news programs (i.e., outlet level or editorial unit). In addition, these results do not seem to give support to the *ideological asymmetry hypothesis* (Rodriguez, Moskowitz, Salem, & Ditto, 2017), which states that there is a difference in selective exposure between the left and right (most notably

that Republicans avoid information more than Democrats), because of different psychological underpinnings in political attitudes. Theoretically, this would suggest that there might be something other than partisanship or ideology that drives selective exposure (at least if we consider the whole population at large), or perhaps that public service news might be good at uniting Swedish citizens along ideological and party lines.

Article II. Reinforcing Spirals at Work? Mutual Influences between Selective News Exposure and Ideological Leaning

- *Publication:* Dahlgren et al. (2019).³⁵
- *Purpose:* Investigate the mutual influences between selective exposure and political attitudes over several years.
- *Method:* Three-wave panel survey over two years with a cross-lagged panel model (n = 2,254).
- *Main finding:* Left-leaners become somewhat more left-leaning when they use left-leaning media, and right-leaners become somewhat more right-leaning when they use right-leaning media. People do not necessarily avoid media from the opposing side, however.
- *Open data and materials:* None.

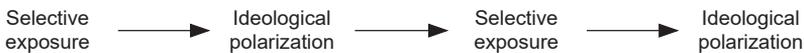


Figure 3.2: **Focal relationship.** Causal diagram of the relationship between selective exposure and ideological polarization over time.

Do left-leaning people become more left-leaning when they consume left-leaning media, and do right-leaning people become more right-leaning when they consume right-leaning media? The question of whether attitudes polarize following media use has been debated, and previous studies have found mixed evidence. Stroud (2010),

³⁵ This is a co-authored paper with a roughly equal amount of work across all co-authors. My contribution to this paper is primarily the introduction and discussion for the published paper. For the first version of this paper (which is described further in the open science section), however, I also did the analyses.

for example, found evidence in one direction (selective exposure → political polarization), but not the other direction, using a two-wave panel survey.

We used a three-wave panel survey over two years, 2014 to 2016, to investigate the reciprocity between ideological leaning and the use of mass media on the political left and right. Both newspapers on the political left and right (Aftonbladet and Svenska Dagbladet, respectively) and news sites on the left and right (ETC and Avpixlat, respectively) were used as measures. When excluding moderates from the descriptive statistics in the first wave,³⁶ there is evidence of ideological selective exposure. Left-wing citizens are more likely to use left-leaning media, and right-leaning citizens are more likely to use right-leaning media (both print and online news).

The main focus of the article, however, is the reinforcing spirals model (Slater, 2007, 2015), which theorizes a spiraling process that goes on over time in which media use is both a predictor and an outcome. During three waves with one year between each wave, after controlling for several variables, we found a small degree of polarizing both ways (i.e., cross-lagged coefficients), so that people who use left-leaning news become more left-leaning, and in the next wave also use more left-leaning news. A similar pattern was also observed among those who lean to the right, they lean more to the right when they use right-leaning media, and so on.

While it is tempting to think that spirals such as these may continue forever with ever-increasing polarization, the spirals are mostly (both theoretically and empirically) about maintaining existing media use or attitudes, and they may fluctuate during threats to social identity (Slater, 2015). Consequently, the changes are not particularly large (partly also because the coefficients are lagged), and there are many other factors that influence which media people tend to select, as well as how intensely they identify with their ideology. Nonetheless, an interesting finding was that the reciprocity was stronger for online news than print news. This is likely to be because printed Swedish newspapers are seldom particularly partisan in their news reporting, and the partisanship is mostly confined to their editorials.

Cross-lagged panel models are not perfect for causal inference (e.g., Hamaker, Kuiper, & Grasman, 2015), but there are clear benefits in being able to simultaneously study polarization both at the aggregate level and the individual level over time, which is something that is hard to come by using other methods. There are some concerns regarding the publication process of this article, however, which I

³⁶ Moderates were excluded by only including left-leaningers who scored 0 to 2 or right-leaningers who scored 8 to 10 on an 11-point scale of ideological leaning.

will discuss further in the section on open science and publication bias.

Most importantly, this selective exposure and polarization over time does not mean that people avoided challenging information or news. Those who used online news from one political side also tended to use news from the opposing side. This suggests that exposure to information from the opposing side may also have the ability to contribute to polarization. In other words, it may be the case that exposure to information that one has *not* selected (i.e., forced exposure) also contributes to polarization, an issue that is explored further in article III.

In summary, the results indicate that selective exposure to (the outlet level of) newspapers may strengthen people's ideological leanings to a small extent when they read newspapers that they agree with. To reiterate, this research was carried out over a period of two years for a political attitude that is typically very stable over time (i.e., ideological leaning). Theoretically, these results would indicate that even though people may engage in selective exposure, it does not mean that they necessarily avoid challenging information, nor that challenging information does not also contribute to polarization.

Article III. Forced vs. Selective Exposure: Threatening Messages Lead to Anger but Not Dislike of Political Opponents

- *Publication:* Preprint.
- *Purpose:* To test a psychological mechanism from forced message exposure to affective polarization.
- *Method:* Preregistered full factorial $2 \times 3 \times 2$ pre-test post-test survey experiment ($n = 2,514$).
- *Main finding:* People do not start to dislike their political opponents when exposed to messages they do not like, but become angry and counterargue.
- *Open data and materials:* Analysis script, a priori Monte Carlo simulation, covariance matrix to reproduce structural equation models, and synthetic data available at the Open Science Framework (<https://osf.io/tjqau/>). I am not permitted to share the raw data publicly due to the General Data Protection Regulation (GDPR) and by agreement with the Laboratory of Opinion Research (LORE) at the University of Gothenburg.

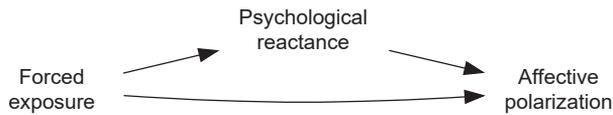


Figure 3.3: **Focal relationship.** Causal diagram of the relationship between forced exposure (i.e., *no* selective exposure) and affective polarization, where psychological reactance (a form of resistance) intervenes.

Selective exposure theory presupposes that people to some extent avoid challenging information. However, people may sometimes be exposed to online messages that they have not selected (and may not like), such as angry and one-sided messages (Crockett, 2017; Fletcher et al., 2020; Fletcher & Nielsen, 2017). In the final article, therefore, I expose participants to content that they have (not) selected in order to test a specific psychological mechanism of how affective polarization may occur.³⁷

The idea behind this experiment is therefore that people are exposed to angry messages about refugee immigration that they have not selected (i.e., forced exposure), and resist the messages by getting angry and counterarguing (so called *psychological reactance*). At the same time, they would also start to dislike their political opponent. This hypothesized process is depicted in Figure 3.3.

The results indicate that forced exposure does not seem to lead to affective polarization, and that the relationship is not mediated by reactance. However, the effects on reactance were substantial,³⁸ which suggests that some content may indeed make people more likely to get angry and counterargue, but they do not necessarily dislike their opponents more (or less for that matter). Furthermore, selective exposure was not found in general, but only among some of the participants, since the majority of participants selected two-sided messages.

Note that article I and article II used surveys that retrospectively asked people what information they were typically exposed to in general. This is easy to administer but relies on people's memory, which can be influenced by social desirability biases,

³⁷ While the article focuses on exposure to content that participants did not choose, several other names exist for this kind, or similar kinds, of exposure: *cross-cutting exposure*, *forced exposure*, *incidental exposure*, *accidental exposure*, and *de facto selective exposure*. All these can in some form or another be considered the opposite of selective exposure, since exposure is not necessarily intentional or motivated.

³⁸ Ranging from an absolute $\beta = 0.42$ to $\beta = 0.76$.

preference falsification, selective recall, memory impairments, and so on (e.g., Clay et al., 2013; Kuran, 1997). This experiment instead asked what content participants wanted prior to being able to see the content, and they were then either exposed or not exposed to their stated choice of content. Such measures are objective in the sense that they do not depend on people's good memory.³⁹

There are several salient methodological points I probably should make regarding this experiment, not at least because it may differ from experiments that are commonly used in this research tradition. First of all, I calculated the statistical power beforehand, which is unfortunately almost completely absent in communication science (Holbert et al., 2018), even though it is necessary in order to balance false positives and false negatives in the null hypothesis significance testing (NHST) framework (Cohen, 1988). Secondly, I used more severe hypothesis testing than merely rejecting the null hypothesis (see Meehl, 1967; Mayo, 2018).⁴⁰ Thirdly, the content was experimentally manipulated in order to affect the mediator, which is necessary to be certain that mediation actually took place (Green, Ha, & Bullock, 2010). Fourthly, all of these decisions were stated in advance in a preregistration protocol with a detailed analysis plan in order to minimize the so called researcher degrees of freedom (Simmons, Nelson, & Simonsohn, 2011). For instance, an a priori Monte Carlo simulation (Kelley, 2010) was carried out before the experiment, which shows all predicted versus actual values of all variables (Figure 3.4).⁴¹ All these methodological choices put together increase the severity of the experiment,⁴² which consequently increases the probability of null findings.⁴³

³⁹ The question itself can nonetheless influence selective exposure, not least by restricting the number of alternatives (Clay et al., 2013; Feldman et al., 2013). The experiment also used an entertainment option that may have provided participants with an "escape hatch", which may have alleviated selective exposure.

⁴⁰ Many studies typically use qualitative hypotheses with either direction (e.g., "more X will lead to more Y") or mere association that rejects the null hypothesis ("X and Y are correlated"). This does not bring much information because the "rejection of any null does not 'prove' the research hypothesis in any but the weakest sense" and the "practice of rejecting 'no effect' in favor of 'some effect' does not encourage the researcher to determine the size and nature of the effect" (Granaas, 2012, p. 2). In other words, it may be the case that $H_0 \perp H_1$. To add fuel to the fire, one cannot even have evidence *for* the null hypothesis because $P(D|H_0) \neq P(H_0|D)$; where H is an hypothesis and D is the data (although, for equivalence tests, see Lakens, 2017). A more severe approach to hypotheses is to, for example, state the functional form ("more X will lead to more Y, *curve-linearly*"), range ("more X will lead to *30–50 percent* more Y"), conditional predictions ("more X will lead to more Y, *but only during Z*"), or combinations of them (see also Holbert & Park, 2020).

⁴¹ A priori Monte Carlo simulations are mostly informative before an experiment takes place, because they provide an opportunity to find problems that are difficult to foresee, especially with complex experimental designs (Kelley, 2010).

⁴² As Mayo put it: "A claim is severely tested to the extent it has been subjected to and passes a test that probably would have found flaws, were they present" (2018, xii).

⁴³ Because $P(D|A, B, C) < (P(D|A) \vee P(D|B) \vee P(D|C))$, where A , B , and C are arbitrary choices.

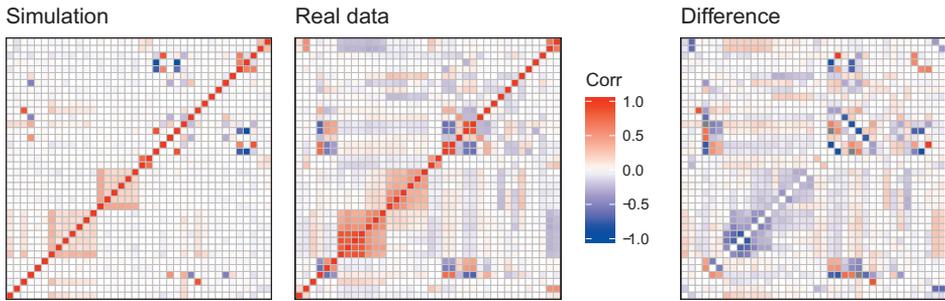


Figure 3.4: **Prediction versus reality.** Correlations of article III: what I predicted and simulated the correlations between all variables of the experiment would be (left graph); what the correlations actually was, based on the real data from the survey experiment (middle graph); and how large the difference were between them (right graph). For example, the two big rectangles in the lower left of the graphs are psychological reactance and need for cognition.

In summary, the experiment did not find evidence of affective polarization since people did not start to dislike people more after exposure to content they disagreed with (or content they had not chosen). The main takeaway, however, is that people did get angry and started to counterargue when they were exposed to content they disagreed with. Theoretically, psychological reactance is likely to be highly prevalent in the selective exposure process, or more precisely in forced exposure, although the exact nature would require further research. What is clear, however, is that people did not have a preference for supporting information only, but indicated an interest in opposing viewpoints as well, which would suggest that selective exposure is limited.

Open Science and Publication Bias

A thesis about confirmation bias would probably not be complete without some words on the confirmation bias of confirmation bias research (for lengthier discussions, see for instance Evans, Newstead, & Byrne, 1993; Crawford & Jussim, 2017). Falsificationist philosophies state that arguments should be able to overcome stricter hurdles over time, and be able to predict what is happening in the world instead of merely catching up with what is happening in it (e.g., Lakatos, 1999; Mayo, 2018). For instance, one does not judge the progress of athletes by lowering the bar they have to jump over, but by raising it: the more danger, the more honor.

Unfortunately, that is not necessarily how research is carried out (Meehl, 1967).

One way to adhere to falsificationist philosophies is to pay more attention to refutation rather than confirmation (especially the more mature a research program becomes).⁴⁴ I have done so by preregistering the experiment in article III and making all data, analysis scripts (also for article I), stimuli, and documents publicly available on the Open Science Framework, as far as the General Data Protection Regulation (GDPR) will allow. Preregistration helps avoid the benefit of hindsight, since it is always easier to look at the results and figure out how to spin them into a good story than to deduce conclusions from a theory and predict the results in advance (Kerr, 1998; Lakatos, 1999). This is not necessarily a trivial concern: it has been identified as an important factor that may contribute to weak theories and the so-called replication crisis (Nelson, Simmons, & Simonsohn, 2018; Rubin, 2017).

I have also simulated the experimental data, explicitly prioritized minimizing false positives wherever appropriate, and separated exploratory from confirmatory research whenever relevant (for an explanation of why, see Wicherts et al., 2016). In short, I have tried to practice open science to the greatest extent possible, which can most simply be described as “show me” rather than “trust me” (Stark, 2018). Transparent open science practices help to avoid questionable research practices (John, Loewenstein, & Prelec, 2012), and can consequently be considered a riskier test of an argument since the chances of others finding errors (and thus helping to correct them) also increase when they are not hidden from public scrutiny. And there most certainly are unintentional errors in this thesis, the question is only where and to what degree.

Speaking of open science, it is worth pointing out the publication process of article II. An initial version of the article had non-significant findings using a four-wave panel survey over six months during the 2014 political campaigns in Sweden. This would likely be ideal, given that the reinforcing spirals model focuses on threats to social identity during, for example, periods of political turmoil such as election periods. Several reviewers pointed out that six months was not enough,⁴⁵ and after switching data from the four-wave panel (over six months) to a three-wave panel (over two years), and making several other additional changes,⁴⁶ the findings

⁴⁴ This is because of deduction (modus tollens $T \rightarrow H, \neg H, \therefore \neg T$), which is stronger than its inductive counterpart (affirming the consequent $T \rightarrow H, H, \therefore T$, where T is the theory and H is the hypothesis).

⁴⁵ This may be seen as a Lakatosian defense of the theory: adding ad hoc auxiliary hypotheses as a protective belt around the hard core to protect it from refutation (Lakatos, 1999).

⁴⁶ These changes consisted of, for example, somewhat different design and statistical modeling, as well as different measures, such as “I often read news that support my own opinions” and “I often read news that runs counter to

went from non-significant to significant. The results were then published.

This is important to mention for two reasons. Firstly, publication bias can sometimes lead to an overestimation of effect sizes and the theories they are intended to support. If only positive findings are published, then, by necessity, *all* theories can inevitably be corroborated by at least some data by the mere presence of false positives (Franco, Malhotra, & Simonovits, 2014; Ioannidis, 2005). However, not all false positives are as nice as the one by Christopher Columbus. Publication bias may also be considered a form of confirmation bias when only positive findings are sought (see *positive test strategy* in Klayman, 1995).⁴⁷ As Mayo (2018) points out, “One does not have evidence for a claim if nothing has been done to rule out ways the claim may be false” (p. 5). In the long run, publication bias may direct subsequent research to futile endeavors:

The guidance that a hypothesis in hand represents for further information gathering can function as a constraint, decreasing the likelihood that one will consider an alternative hypothesis if the one in hand is not correct. (Nickerson, 1998, p. 193)

Publication bias in selective exposure research has been mentioned previously, perhaps most prominently by Sears (1968) who noted that even though experiment after experiment has failed to find evidence of selective exposure, researchers seem to dismiss those experiments as having methodological shortcomings. Sears considered it questionable that all shortcomings “seem to operate in a single direction: to minimize selective exposure” (1968, p. 781).⁴⁸

Normally we assume that probability values are based on what would probably happen if a given experiment were replicated many times; i.e., what would happen in the long run. Yet what in fact do we assume if a series of studies obtain no differences, and finally one does support the hypothesis? The norm

my own opinions?”. These questions are closer to the level of the editorial unit when considering different levels of selective exposure. The published version, on the other hand, had the question “How often did you in the past week read the following newspaper”, followed by the individual newspapers, which may be closer to the outlet level than the editorial unit. Note that these are not the only differences, they are only illustrative examples.

⁴⁷ It would also be a confirmation bias to only consider $P(D|H)$ but not $P(D|\neg H)$, where D is the data and H is the hypothesis. Note that this discussion is about confirmation bias regarding logic and behavior, not necessarily people’s psychology, such as motivations or intentions (Nickerson, 1998).

⁴⁸ Although it may be tempting to state that an experiment or study “did not work” when a hypothesized effect was not found, this phrase may instead reflect a misunderstanding of the goal hypothesis testing (or a value judgment of what hypothesis testing *should* be about). The purpose of hypothesis testing is to test a hypothesis. Whether an hypothesis is corroborated or not is therefore part of the result, not the purpose. To try to confirm the results could instead be seen as an instance of confirmation bias (see Poletiek, 2001).

seems to be to reject the prior series as having been poorly conducted, with inadequate manipulations, impotent designs, poor sampling, etc. [...] The final study is accepted as finally having proven the point, and the others are rejected as not having been fair tests. Obviously, though, there must come a point when one starts to take negative results seriously. (Sears, 1968, p. 781)

The second reason that publication bias is important to mention is that failing to report outcomes of studies can be considered scientific misconduct (Office of Research Integrity, 2019; Wallach & Krumholz, 2019). As the European Code of Conduct for Research Integrity states regarding good research practices, “Authors and publishers [should] consider negative results to be as valid as positive findings for publication and dissemination” (ALLEA, 2017, p. 7).

Of course, this may not say anything about article II itself, or the other articles for that matter. The fact that many other things also changed in the manuscript makes it hard to know which results correspond to reality, since undisclosed flexibility in the analysis can increase the chances of significant results (Simmons et al., 2011). It may very well be the case that the published version with significant results has greater correspondence with reality, than the version with non-significant results that was not published; or it may be some hidden moderator that is causing the differences in the results. These questions become harder to investigate when statistically significant results are preferred and made part of the scientific record, while non-significant results are not.

Putting the article aside, however, and discussing the issue on a level of principles, publication bias does not help us distinguish between truth and falsehood, but rather conceals them. If articles are published conditional on what they *should* show rather than what they *actually* show, then social science ceases to correspond with reality. The move toward open science and transparency is therefore beneficial for science, though not necessarily beneficial for individual scientists, who will have a harder time publishing “beautiful articles” (O’Boyle, Banks, & Gonzalez-Mulé, 2017).

4 Selective Exposure—Is it Always Bad?

Selective exposure is a very theory-laden concept and implies that some exposure is better than others. In other words, selecting content we agree with is sometimes considered bad. But why?

Now that the articles have been summarized, I will take some time to explore the normative underpinnings of selective exposure. I do this because they are not always mentioned, and they should be mentioned because “research findings are interesting and/or important precisely because they tell us something about some consequence that is positively or negatively valued” (Mutz, 2008, p. 523). At the same time, what is actually valued is seldom stated explicitly, but instead “critical appraisals of bad things we are against may come easily to us” while it is “much harder to say with precision what we are for” (Hännska, 2019, p. 15).⁴⁹ Not surprisingly, selective exposure is often mentioned in discussions about seemingly bad outcomes such as polarization, less political knowledge, loss of a shared social world, lack of understanding of other people’s viewpoints, and the notion that people may end up with a skewed picture of the world (as mentioned in the first chapter).

The question, then, is what citizens in a democratic society ought to do with their (news) media consumption and, more importantly, why. From a democratic perspective, the value of the media and an informed citizenry, for instance, is often taken for granted as something to strive for, but the claim about “the importance of informed citizens in classical democratic theory happens to be false” (Althaus, 2012). More precisely:

Certainly the interests of many citizens will be at stake in any policy decision, but it is another thing to presume that democracy requires citizens to exercise vigilance over every interest they might have. The institutions of representative as opposed to direct democracy are designed precisely to avoid encumbering

⁴⁹ Althaus (2012) similarly noted that “assumptions about what’s good and bad in political communication seem closely tied to a top-down, mass-audience, mainstream news system that no longer exists”. Lang (2013, p. 14) also stated that “the field [of mass communication] includes a normative sense, that the effects of mass communication are bad”.

citizens with such an onerous responsibility. (Althaus, 2006, p. 83)

A transition from a low-choice to a high-choice media environment may make it easier for citizens to form interest groups that exert pressure on public service broadcasters and other types of national media, as well as other societal institutions (not least, by organizing interest groups via social networking sites).⁵⁰ Most importantly, though, it enables them to start publishing advocacy journalism of their own in the form of partisan news sites. However, it is unlikely that partisan news sites will replace public service news or traditional news media. For instance, those who have high political interest also seem to use public service news to a higher degree than those with lower interest (as suggested in article I), which may indicate that interest groups can scan public service news and traditional news media for news stories that interest them, and exert pressure through their own channels and their own advocacy journalism. This is one way for citizens to “exercise vigilance over every interest they might have”, as suggested by Althaus earlier.

Relative and Absolute Exposure

Selective exposure can also be relative or absolute. Selective exposure theory is primarily focused on the relative proportion of exposure. For example, if you browse through a print newspaper and read six supporting articles and four challenging articles, then it is selective exposure; if you read 60 supporting and 40 challenging articles online the relative exposure would be identical.

Claims such as people primarily select information they agree with and people are reading more content they disagree with than ever before can consequently both be true, because they are independent claims, not contradictory, based on relative and absolute amounts of exposure. This distinction is not captured in experiments and other kinds of observation that primarily deal with relative differences between groups, such as average treatment effects or changes over time. The descriptive statistics provided here (in article I for instance) suggest that the absolute amount of exposure to public service news is fairly consistent over three decades, with just a slight decrease.⁵¹

⁵⁰ Some have argued that we can see selective exposure as good or bad using two contrasting democratic perspectives, *republican democracy* or *liberal pluralism democracy* (Althaus, 2012; Baker, 2002, Ch. 6). These are not the only perspectives—there is a vast literature on this topic—but they could be useful as two contrasting perspectives in relation to selective exposure.

⁵¹ For instance, the descriptive statistics indicated that about 58 percent of the Swedish population used public service

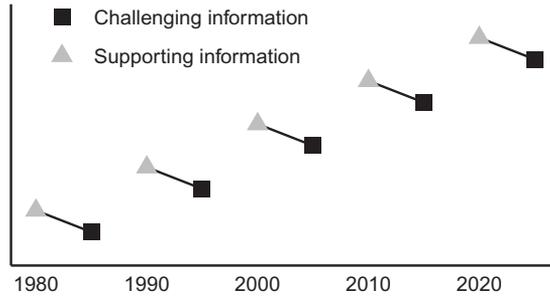


Figure 4.1: **Relative and absolute exposure.** Illustration of Simpson's paradox (Malinas & Bigelow, 2016) within selective exposure. Even though the absolute amount of exposure (as indicated by the Y-axis) to both challenging and supporting media content may have increased over the years, the relative exposure of supporting to challenging information may stay the same or even decrease.

Similarly, studies that only focus on a single medium at a time may not reflect citizens' media consumption because the absolute amount of exposure to challenging information may increase tenfold by using many media, or over time, even though the proportion stays the same, or even decreases, *within* each medium (see Figure 4.1).

Typical media exposure measures that ask how many days per week a citizen uses a particular media or news outlet do not capture the intensity of use, and can consequently say little about the absolute amount of exposure. In other words, it may be a very different experience to use a medium 15 minutes every day (e.g., a news show at prime time) compared to 150 minutes spread across the entire day (e.g., news articles shared on a social networking site).

In short, the type of comparison matters. The things we compare implicitly endorse a normative ideal, and selective exposure can easily be shown to be good or bad depending on what is singled out for comparison. In other words, "because evaluations are made without supplying a clear metric of judgment, positional critiques offer limited traction on the slippery slope of evaluating media and citizen performance" (Althaus, 2012). Filter bubbles and recommender systems on social networking sites, for example, have been compared to news editors (e.g., Pariser, 2011). It is not self-evident that one must or should make this comparison. If we compare social networking sites to discussions at the dinner table, on the other hand, we could consider social networking sites as a substantial increase in the amount of

news at least five days per week in 1986, compared to 52 percent in 2015.

political discussion, although the quality may be called in question. Nonetheless, the *absolute* (i.e., total) amount of exposure to political information in a given day for an individual, across all media, could also be important (e.g., Webster, 2014).

For the results of this thesis, this would imply that we cannot simply take the results of each article and interpret the conclusions individually as good or bad, especially not at the societal level. A citizen's media diet might consist of several sources, and a too narrow focus on only one or a few media at a time risks giving an incomplete picture.⁵² After all, if we consider Alice again, she could engage with one newspaper such as Aftonbladet precisely because it strengthens her viewpoint immediately after being exposed to online discussions that challenge her viewpoint (for similar arguments about social networks, see Huckfeldt et al., 2004; Webster, 2014). In other words, selective exposure is not necessarily intrinsically bad—especially not if we consider selective exposure as a process that unfolds over time.⁵³

⁵² Note that this also rests on the assumption that multiple sources means that you get multiple perspectives. But is it not possible for a single source to give multiple perspectives on an issue, like public service broadcasting tries to do? Or vice versa, for that matter?

⁵³ The same could be said for polarization. There are even situations where people *ought* to polarize, especially given a Bayesian view wherein prior beliefs are taken into account to influence the interpretation of new events (e.g., Benoît & Dubra, 2019; Gerber & Green, 1999; Jern et al., 2014).

5 What Have we Learned?

The purpose of this thesis was to investigate selective exposure and political polarization, and, more precisely, whether selective exposure leads to political polarization (and if so, how).

To summarize briefly before turning to the conclusion, various aspects of the relationship between exposure and polarization have been explored using an experiment and a longitudinal panel and survey. Selective exposure has increased over time in some respects, most notably among those who lack a political interest and who tend to use public service news less. After controlling for various factors (such as sex, age, and education), selective exposure has increased even further. However, the general pattern of the descriptive statistics is that selective exposure remains fairly stable over time, both in terms of public service news use and the use of newspapers to the political left and right (both offline and online).

In short, the evidence provided for selective exposure over time is to some extent in line with some of the research on selective exposure during the last century, which contends that selectivity may occur more among some than others. More specifically, the high-choice media environment does not seem to have necessarily increased selectivity to the point that people only select information that supports their beliefs or attitudes,⁵⁴ nor that people necessarily avoid information that they do not agree with.

The question of how polarization occurs has also been explored in terms of reinforcing spirals and psychological reactance (a form of resistance). While the reinforcing spirals gave an indication of political ideology and selective exposure reciprocally polarizing each other over time, after controlling for various factors, there were likely some concerns regarding the publication process that should also be considered. Finally, no evidence was found that exposure to threatening and angry messages increased affective polarization. Consequently, the relationship was

⁵⁴ Furthermore, selectivity has not become as large a problem as others have previously warned us about (e.g., Bennett & Iyengar, 2008; Sunstein, 2001). Note, however, that saying that something is not as large a problem as previously thought does not mean that no problem exists at all. Those are different claims.

not found to be mediated by psychological reactance, even though the effect on reactance was substantial.

Thus far, we have a general and broad overview of the population at large. If we restrict the discussion to people with the most clearly left-leaning or right-leaning ideologies, we may see a somewhat different picture. People with clear leanings in either direction may select more content that agrees with their attitude, and become more extreme, at least under some circumstances. It may not be the media or the number of choices alone that drive this process: rather, they facilitate those who already want to select that kind of content. In other words, there may be reason to believe that the causality is backwards: instead of selective exposure leading to polarization, it may be the case that polarization more often leads to selective exposure. In the case of the United States, for example, some have argued that “the emergence of partisan news media is more a symptom of a polarized political system than a source” (Arceneaux & Johnson, 2015b, p. 309). Public service broadcasters may indeed set the goal to unite the population, in various ways, but this strategy may also backfire if they try to unite people when there are groups of people who simply do not agree with the broadcaster’s views on what is important to highlight.⁵⁵

To conclude, these results suggest that the process from media exposure to political polarization is an elusive thing, which unfortunately rings true in comparison to a previous review that concluded that the evidence is mixed *at best* (Prior, 2013, p. 101). One thing that is important to mention, however, is that selection of media content that people agree with in some way or another does not mean that they necessarily avoid media content that they disagree with (Frey, 1986; Garrett, 2009; Sweeny et al., 2010). There may be many other factors that can pull people away from content that they agree with, or pull them toward content they disagree with, such as ads or the availability of useful high-quality information (Knobloch-Westerwick, 2014; see also Webster, 2014). Theoretically, we should separate selective exposure from selective avoidance, they are underpinned by two different and somewhat independent psychological motivations.

Information avoidance may very well be uncommon in some situations, especially online, where exposure to opposing viewpoints can be commonplace (e.g., Kobayashi, 2020). For example, those who use partisan news outlets are often more partisan to begin with, and consequently *more* interested in seeking the other side of

⁵⁵ This is one reason why partisan news sites are founded, because a topic does not get the desired treatment in the traditional mass media. One should not be too quick to dismiss partisan media as inaccurate either, since it is the content (assumptions, claims, arguments, framing, ethics, etc.) that determines its accuracy, not its partisanship.

the argument in order to counterargue (Hart et al., 2009). This type of oppositional news consumption does not happen with those who do not care, or those who simply tune out (Arceneaux & Johnson, 2013). As others have argued when studying multiple countries, “news audience polarization is not inevitable in environments that are increasingly characterized by digital news consumption” (Fletcher et al., 2020). This would suggest that incidental exposure to news and information could still happen, even in an attention economy dominated by choice. One reason, as mentioned previously, could simply be that the absolute amount of news and information exposure is higher due to the internet.

Even though these conclusions focus primarily on selective exposure in the narrow sense of confirmation bias, it is important to mention the comparatively strong evidence for selective exposure in the broad sense (i.e., systematic bias in audience composition). As almost all the available evidence suggest, across countries and over time and probably your own anecdotal observations, people select some media sources more than others, and selective exposure has in this sense naturally increased.

The implications of the results of this thesis suggest that selective exposure in the narrow sense of confirmation bias might not be a general phenomenon among all citizens, at least not to the degree that some scholars and journalists have raised concerns about (Van Aelst et al., 2017), but instead be conditional on the specific individuals and situations (Arceneaux & Johnson, 2013; Lang, 2013; Valkenburg & Peter, 2013). The metaphor of a *media echo chamber* where the only voices people hear are more of the same is therefore far from reality. Furthermore, if it is the case that people’s selective exposure and selective avoidance (or, more generally, their approach and avoidance motivations) are asymmetrical, there might also be less cause for concern, from a democratic perspective, that citizens will avoid information that they ought to know. Even so, information avoidance might not be a particularly significant problem among citizens in general in a representative democracy if citizens transfer their decision-making to their representatives who, in turn, do not avoid information that they ought to know (Althaus, 2006); and if the representatives do avoid information, their opposition would probably be more than happy to tell them. In more extreme cases, demagogues and populists may denounce traditional mass media and yet still rely on their news stories to substantiate their opinions. In other words, “they must monitor what they hate” (Bruns, 2019, p. 97).

What about Other Countries, People and Topics?

The statistical generalizability of findings is always a question, and it may be the case that the findings reported here are only applicable to these people under these conditions using these particular operationalizations investigated by me specifically in that particular moment. But instead of giving up on inductive reasoning altogether, the evidence presented here is arguably *not that* limited.

Representative probability samples of the Swedish population were mostly used, which suggests that these findings should be applicable to some extent to the Swedish population. Focusing on the majority of people in a country rather than loud minorities has its benefits and pitfalls. While it is not uncommon in selective exposure research to remove those with moderate political positions, the inferences are therefore limited to only a proportion of the population (see Clay et al., 2013). Getting a glimpse of the whole population may therefore be important to *counter* the narrative of extremely persuasive media effects and strong selectivity.

At the same time, one should be careful of swinging the pendulum too far in the opposite direction. Just because a group of people are in a minority when it comes to their political attitude, this does not necessarily mean that the group lacks influence. A small but active minority may be loud enough to be heard by the many, and the minority can also direct its efforts into disseminating information via channels that *do* have a substantial influence on the majority (Levendusky, 2017). Having your views picked up by the mass media may be a particularly effective way of disseminating your message, which can further influence other media as well. In short, the *perceived* polarization among citizens could be high, as portrayed by the mass media, while the actual polarization among citizens could be minuscule (e.g., Druckman et al., 2013; Ahler, 2014).

The topics studied here have consistently been political in nature. The majority of people's media consumption and their participation in social networking sites, however, is not necessarily based on political affiliations.⁵⁶ This would suggest that if it is hard to find selective exposure and polarization in political topics, it would be even harder to find it in less politically charged topics.⁵⁷

⁵⁶ Duggan and Smith (2016, p. 9) stated that "a notable proportion of users simply don't pay much attention to the political characteristics of the people in their networks".

⁵⁷ For example, the average meta-analytic effect size for selective exposure to organization and business administration information is quite low (Cohen's $d = 0.20$) compared to selective exposure to political information ($d = 0.46$) (Hart et al., 2009).

Future Research

Investigation of individuals' behavior is necessary and important, but it is not sufficient for information exposure and might even be highly misleading in *social* environments where opinion leaders and a multi-step flow of communication—such as social networking sites—dominate information dissemination to a higher degree than ever before (e.g., Bergström & Jervelycke Belfrage, 2018). Most importantly, the purpose of exposure (or dissemination) is not always for individuals to confirm their own beliefs or attitudes. Methodologist Donald Campbell, for instance, expressed concerns about the lack of social perspectives and the dominance of individual-centric theories in the social sciences:

Methodological individualism dominates our neighboring field of economics, much of sociology, and all of psychology's excursions into organizational theory. This is the dogma that all human social group processes are to be explained by laws of individual behavior—that groups and social organizations have no ontological reality—that where used, references to organizations, etc. are but convenient summaries of individual behavior. (Campbell, 1994, p. 23)

Since humans are social animals, we do not always do things in isolation from others, but often precisely because other people are present, even in some distant way through a medium. Some have argued that selective exposure theories are consequently incomplete “because they ignore people's beliefs and goals regarding *information display*” (Hart, Richardson, Tortoriello, & Earl, 2020, p. 417). In other words, selective exposure “is not merely about reading/processing preferences but also reflects a way to self-present one's authentic views to audiences” (Hart et al., 2020, p. 439). By making people's own selective exposure obvious to their peers, people's information consumption is one way to display their status. Future research could therefore put more emphasis on the role of selective exposure within and across groups, and particularly the role of information display.⁵⁸

⁵⁸ The filter bubble idea touches upon the subject of groups and the social, but is limited in its ability to explain information selection as something other than a means to confirm one's own political beliefs and attitudes (Dahlgren, 2018).

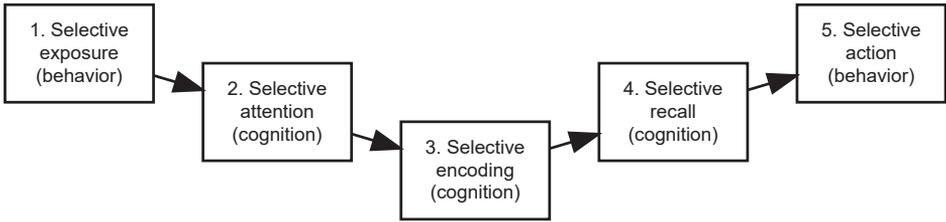


Figure 5.1: **Selective processes.** Multiple selection processes occur at different levels of analyses, from behavior to cognition and back again, as indicated by the elevation of the boxes.

Similarly, selective exposure is only the first step in a long series of selection processes that start in the outside world, take a detour inside your head, and end up having consequences for the world again. The detour in your head regards selective attention to some aspect of reality and not others, selective encoding of which experiences and memories to store and how, as well as selective recall (or selective forgetting) of memories which in the end results in further behavior. These processes (represented in Figure 5.1) can most simply be summarized as *selective interpretation*, which may ensure that an individual can, for example, easily access relevant evidence to bring forward in a debate. This again emphasizes the need to study selective processes in social settings such as groups (with or without onlooking audiences).

In relation to the results in this thesis, therefore, it might be the case that the many choices that the internet gives people do not necessarily cause people to insulate themselves from opposing viewpoints, but instead help organize people into like-minded groups where they can collectively respond to opposing viewpoints. If this would be the case, conflict between prominent groups (such as activists) would be common, and selective interpretations (that occur collectively within those groups) of the viewpoints from the other political side would be particularly common—much more so than individual selective exposure where a single individual only talks to like-minded people shielded from opposing viewpoints.

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Svensk sammanfattning

Internet har ökat antalet informations- och mediekällor dramatiskt. Om det tidigare (främst innan 1990-talet) fanns en handfull tv-kanaler och tidningar tillgängliga för en enskild medborgare, går det nu enkelt att komma i kontakt med likasinnade och få sina intressen tillgodosedda utan större ansträngning. Valmöjligheterna har helt enkelt blivit närmast oändliga.

Men när valmöjligheterna ökar blir också medborgarnas personliga preferenser allt viktigare för det medieinnehåll de väljer. Det innebär därmed att det blir enklare för en person att välja politiskt innehåll som stämmer överens med de befintliga politiska attityderna och övertygelserna (så kallad *selektiv exponering* och mer specifikt *konfirmeringsbias*).

Frågan som uppstår i detta nya medielandskap är därmed om medborgarna kommer att välja allt mer av samma innehåll som de redan valt, så att de till slut lever i skilda och parallella informationsvärldar, eller mediala ekokammare som vi metaforiskt kan kalla dem, där de endast hör ekot av sina befintliga åsikter. En viktig konsekvens är att det riskerar leda till att medborgarnas politiska attityder och övertygelser blir mer extrema (*politisk polarisering*). Det kan ske på flera olika sätt, till exempel att ens politiska ideologi blir mer extrem så att exempelvis vänstern blir mer vänster och högern blir mer höger (*ideologisk polarisering*), eller att man allt mer ogillar personer med andra politiska uppfattningar (*affektiv polarisering*).

Trots dessa farhågor om ökad selektiv exponering och ökad politisk polarisering i samhället saknas det kunskap om denna medieutveckling. Den kunskap som finns har framför allt sitt ursprung i USA, ett land som skiljer sig väsentligt från Sverige på flera punkter, däribland vad gäller mediasystemet och det politiska systemet, men också vad gäller den befintliga politiska polariseringen.

Syfte och frågeställningar

Syftet med denna sammanläggningsavhandling är därför att undersöka relationen mellan selektiv exponering och politisk polarisering, i synnerhet på den individuella

nivån (eftersom selektiv exponering är en individcentrerad teori när det kommer till konfirmeringsbias), och dessutom hur denna relation har utvecklats över tid.

Två frågeställningar står i fokus som besvaras genom tre artiklar:

1. Hur har relationen mellan olika politiska preferenser (partisynpati, politisk ideologi och politiskt intresse) och medieanvändning förändrats över tid hos den svenska befolkningen?
2. Leder selektiv exponering till politisk polarisering (ideologisk polarisering eller affektiv polarisering), och i så fall hur?

Artiklar

Den första artikeln, *Selective exposure to public service news over thirty years: the role of ideological leaning, party support, and political interest*, är den mest omfattande studien av hur politisk ideologi, partisynpati och politiskt intresse påverkar selektiv exponering till public service-nyheter över 30 år. Totalt ingår 103 589 deltagare från de nationella SOM-undersökningarna (slumpmässigt utvalda svenskar genom ett årligt tvärsnitt).⁵⁹

Resultatet visar att användningen av public service-nyheter från Sveriges Television och Sveriges Radio legat på en relativt stabil nivå från 1986 till 2015 (med bara en svag minskning), både vad gäller användning bland hela befolkningen men också i relation till partisynpatier och politisk ideologi. Det är alltså ingen större skillnad mellan olika partisynpatier över tid, och det är heller ingen större förändring (vare sig i användning eller förändring över tid) mellan medborgare på den politiska vänster- eller högerkanten. De som framför allt har hänt, däremot, är att färre personer med lågt politiskt intresse konsumerar public service-nyheter. Dessutom tenderar medborgare med sympatier till partier utanför riksdagen att konsumera public service-nyheter mindre.

Slutsatsen från artikeln är att något stöd inte hittades för att det finns en asymmetri mellan den politiska vänstern respektive högern vad gäller användningen av public service-nyheter. Däremot tenderar politiskt intresserade personer att svara på enkätundersökningar i något högre utsträckning, vilket kan påverka resultaten.

Från ett teoretiskt perspektiv kan resultatet innebära att det inte nödvändigtvis är partisynpati eller ideologi som är den drivande orsaken bakom selektiv exponering

⁵⁹ Analysfiler är tillgängliga via Open Science Framework (<https://doi.org/10.17605/osf.io/pa3me>) och data är tillgänglig via Svensk Nationell Datatjänst (<https://doi.org/10.5878/002896>).

till public service-nyheter, åtminstone inte när man endast tar dessa politiska preferenser i beaktande.

Den andra artikeln, *Reinforcing spirals at work? Mutual influences between selective news exposure and ideological leaning*, undersöker den ömsesidiga påverkan mellan selektiv exponering och politiska attityder. Det vill säga, leder den politiska ideologin (vänster- eller högerideologi) att personer också väljer motsvarande nyhetstidningar (Aftonbladet/ETC på vänsterkanten eller Dagens Nyheter/Avpixlat på högerkanten), vilket i sin tur förstärker ideologin, som i sin tur förstärker valet av tidning, och så vidare. Denna ömsesidiga relation studerades över två år genom en panelstudie (cross-lagged panel model) med tre vågor med 2 254 deltagare slumpmässigt utvalda från den svenska befolkningen genom opinionsundersökningsföretaget Novus.

Resultatet visar på små korslagda koefficienter, vilket indikerar att ideologi och medieval ömsesidigt påverkar varandra över tid. Det finns också några anmärkningsvärda saker vad gäller publiceringen av den här artikeln, som närmare beskrivs i avsnittet (på engelska) om open science och publication bias.

Slutsatsen från artikeln är att det verkar finnas en ömsesidig relation mellan politisk ideologi och medieanvändning över tid, så att medborgarna blir mer extrem i både sin ideologi och sin medieanvändning, även om ökningen är relativt liten. Men det är också viktigt att påpeka att detta ändå inte betyder att medborgarna undviker nyheter som går emot deras ideologi. De som föredrog nyheter från vänsterkanten tog också del av nyheter från högermedier, och de som föredrog nyheter från högerkanten tog också del av nyheter från vänstermedier.

Från ett teoretiskt perspektiv indikerar resultatet att selektiv exponering till nyheter som stämmer överens med en individs attityder eller övertygelser inte behöver innebära selektivt undvikande, det vill säga att man undviker nyheter eller information som går emot ens attityder eller övertygelser. Det kan exempelvis vara så att exponering för information och nyheter som går emot ens attityder eller övertygelser även kan öka polariseringen. Den frågan utforskas i nästa artikel.

Den tredje artikeln, *Forced vs. selective exposure: threatening messages lead to anger but not dislike of political opponents*, studerar den psykologiska mekanismen för hur polarisering uppstår, med fokus på affektiv polarisering. Mer specifikt studeras huruvida deltagare som exponeras för arga Facebookinlägg om invandring, som de uttryckligen har valt att inte få, därmed blir ilska och vill argumentera emot (så kallad psykologisk reaktans, som en medierande faktor) som leder till att de börjar

ogilla de som debatterar invandring.

Designen är ett $2 \times 3 \times 2$ fullfaktoriellt surveyexperiment (med pre-test och post-test) med 2 514 deltagare från Medborgarpanelen vid Laboratory of Opinion Research (LORE) vid Göteborgs universitet. Experimentet är förregistrerat (vilket innebär att hypoteser och analysplan är offentliggjorda innan experimentet genomförs), och all data och analysfiler finns tillgängliga på Open Science Framework.⁶⁰

Resultatet visar att deltagarna varken började ogilla (eller gilla, för den delen) invandringsdebattörer mer efter exponering för argisinta inlägg. Däremot var det en väldigt stark effekt på psykologisk reaktans, vilket i praktiken betyder att deltagarna blev arga och ville argumentera emot Facebookinläggen.

Slutsatsen från detta experiment är att exponering för meddelanden på sociala medier som människor inte har bett om inte verkar leda till att man börjar gilla eller ogilla debattörerna.

Från ett teoretiskt perspektiv indikerar resultaten att exponering för information som medborgare inte bett om inte nödvändigtvis ökar affektiv polarisering, och inte heller verkar psykologisk reaktans spela någon aktiv roll i just den här psykologiska processen. Å andra sidan har psykologisk reaktans en stor påverkan på beteende, genom att människor blir arga och exempelvis argumenterar emot åsikter och övertygelser de inte håller med om. Detta indikerar att det framför allt är sakinnehållet i meddelanden som har betydelse, snarare än huruvida man själv har valt meddelandet eller ej.

Slutsats

Det är lätt att hitta exempel efter exempel där medborgare väljer olika informations- och medieällor. Det är däremot desto svårare att hitta belegg för att medborgare väljer olika informations- och medieällor utifrån sin politiska ideologi eller partisynpaty (selektiv exponering och mer specifikt konfirmeringsbias) och i synnerhet vilka konsekvenser det leder till. Vad som är utmärkande är snarare människors politiska intresse, och detta intresse tenderar att till viss del utjämna de skillnader som uppstår när människor väljer medieinnehåll utifrån sin politiska ideologi eller partisynpaty. Det vill säga, de som är politiskt intresserade tar också del

⁶⁰ Data och analysfiler är tillgängliga via Open Science Framework (<https://osf.io/tjqau>). Då datan inte får göras allmänt tillgänglig, i enlighet med General Data Protection Regulation (GDPR) och avtal med LORE, är det i stället en syntetisk datamängd som liknar den ursprungliga datamängden som är tillgängliggjord.

av information och nyheter från både den politiska vänster- och högerkanten.

Det är också svårt att hitta tecken på politisk polarisering till följd av medieanvändning. Den artikel som lyckades hitta ideologisk polarisering publicerades först efter att data som ger nollresultat (det vill säga, statistiskt icke-signifikanta resultat) bytts ut mot data som ger signifikanta resultat.⁶¹ Likaså hittade det förregistrerade experimentet ingen affektiv polarisering. Det kan delvis bero på att den föreslagna mekanismen för politisk polarisering inte är den sanna mekanismen, men också att polarisering inte uppstår från den typen av medieanvändning.

Avslutningsvis, även om människor enbart skulle välja information och nyheter som stämmer överens med deras befintliga politiska attityder och övertygelser betyder det inte att de undviker information som går emot deras attityder och övertygelser. Det vill säga, det kan vara två psykologiska motivationer som är delvis oberoende av varandra: (1) motivationen att söka information som bekräftar ens attityder eller övertygelser respektive (2) motivationen att undvika information som utmanar ens attityder eller övertygelser. Det räcker med att den senare motivationen är mycket svagare än den första (att man inte undviker i lika hög utsträckning som man väljer) för att det ska bli ett stort hål i den metaforiska mediala ekokammaren.

Implikationerna av de här resultaten i avhandlingen innebär att selektiv exponering och politisk polarisering inte nödvändigtvis är ett så stort problem som många forskare och samhällsdebattörer har befarat, åtminstone inte än, och att det är andra mekanismer som spår på polariseringen i ett samhälle än enbart antal valmöjligheter som stämmer överens med individens attityder eller övertygelser. Det kan exempelvis vara tolkningen av information och medieinnehåll som orsakar mer polarisering, snarare än huruvida man tar del av informationen över huvud taget. Med andra ord, det kan mycket väl vara så att medborgare *hör* argument från sina politiska meningsmotståndare, men att de inte nödvändigtvis *lys*nar.

⁶¹ Ett flertal andra skillnader fanns också, se den engelska texten om open science och publication bias.

Open source contributions

Semproducible is an R package for open science that reproduce structural equation models for the package lavaan, by automatically generating R code and the corresponding covariance matrix from a dataset or lavaan object. Semproducible was used in article III.

Available at <https://github.com/peterdalle/semproducible>.

Appendices (list of articles)

Appendix I: Dahlgren, P. M. (2019). Selective Exposure to Public Service News Over Thirty Years: The Role of Ideological Leaning, Party Support, and Political Interest. *The International Journal of Press/Politics*, 24(3), 293–314. doi:10.1177/1940161219836223

Appendix II: Dahlgren, P. M., Shehata, A., & Strömbäck, J. (2019). Reinforcing spirals at work? Mutual influences between selective news exposure and ideological leaning. *European Journal of Communication*, 34(2), 159–174. doi:10.1177/0267323119830056

Appendix III: Dahlgren, P. M. (preprint). Forced vs. Selective Exposure: Threatening Messages Lead to Anger but Not Dislike of Political Opponents.