



HOW ECONOMIC PERCEPTIONS SHAPE ENVIRONMENTAL ATTITUDES

A case study of the Dreki-Area oil exploration

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How economic perceptions shape environmental attitudes
A case study of the Dreki-Area oil exploration

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Útdráttur

Markmið verkefnisins var að kanna tengsl á milli upplifunar almennings af efnahagsástandinu og viðhorfa hans til umhverfismála, með olíuleitina á Drekasvæðinu til hliðsjónar. Enn fremur, að athuga hvernig almenn nálgun fólks að efnahagsupplýsingum, m.a. í gegnum fjölmiðla, getur haft áhrif á viðhorf til umhverfismála. Hönnun rannsóknarinnar tók mið af fyrri rannsóknum á sviðum stjórnmálafræði og sálfræði á hugtökunum ýfing (e. priming) og innrömmun (e. framing). Þátttakendum í rannsókninni var skipt upp í hópa sem lásu ólíkar tilbúnar fréttaskýringar um efnahagsástandið. Því næst svöruðu þeir spurningalista sem innihélt m.a. spurningar um olíuleitina. Niðurstöður benda til að upplifun á efnahagsástandi hafi áhrif á stuðning við olíuleitina á meðal þeirra sem telja sig ókunnuga olíuleitinni og mögulegum áhrifum hennar, en meðal ókunnugra, voru þeir sem upplifðu efnahagsástandið neikvætt, marktækt jákvæðari í garð olíuleitarinnar en þeir sem upplifðu efnahagsástandið neikvætt. Lestur á annaðhvort neikvæðum eða jákvæðum fréttaskýringum um efnahaginn hafði marktæk áhrif á stuðning við olíuleitina, en þeir sem lásu neikvæðar fréttaskýringar um efnahaginn voru jákvæðari í garð olíuleitarinnar en þeir sem lásu jákvæðar fréttaskýringar um efnahaginn. Niðurstöður sýna að fréttáflutningur af efnahagsmálum getur haft áhrif á afstöðu fólks til umhverfistengdra málefna.

Abstract

The aim of this thesis was to explore the relationship between public perception of economic conditions and public attitudes towards environmental issues, using oil exploration in the North Sea as an example. Furthermore, it aimed to reveal how common exposure to economic information, such as through the media, may influence public opinion on these issues. The research design took direction from previous work done in the fields of political science and psychology on the related concepts of framing and priming. Study participants were divided into groups, given different artificial news reports on economic conditions, and were asked to answer a survey questionnaire that included questions on the oil exploration. Results indicated that, among those unfamiliar with the issue and its potential impacts, perceptions of economic conditions were a significant indicator for approval of the oil exploration: Those who perceived the economic conditions to be more negative were significantly more approving of the oil exploration than those who perceived economic conditions more positively. Additionally, exposing participants to either positive or negative news reports about the economy had a significant impact on approval of the oil exploration, in which those exposed to negative news reports on the economy were more approving of the oil exploration than those exposed to positive reports. Results showed that economic news coverage has the capacity to influence public attitudes towards environmentally related issues.

Foreword

This is a 60 ECTS credit thesis for the degree of MA in Environmental and Natural Resources submitted to the Faculty of Political Science. The primary supervisor for this thesis was Hulda Þórisdóttir and the secondary supervisor Brynhildur Davíðsdóttir. The topic selected is a product of the researcher's curiosity on how public environmental attitudes materialize and what may influence these attitudes, which required diving into the fields of political science, psychology and environmental studies. Many people helped me in various ways throughout the process. First, I would like to thank my primary advisor Hulda for all her assistance and believe in the project, and for directing me through the previously unexplored fields of political psychology, a process I have gained a lot from. I would also like to thank Brynhildur for her help and encouragement, and her infectious enthusiasm for environmental studies. Furthermore, the Hydrocarbon Research Fund funded this research and I would like to offer my sincere gratitude to the people running the fund for their interest, support and encouragement throughout the process. I would also like to offer my thanks to Björn Rafn at the Social Research Institute for his swift and thorough work supervising the survey procedure. Thanks go out to Julia for her expert help in proofreading of the thesis. I would like to thank my fellow students in the ENR program for giving me insight into the many different approaches and takes on environmental issues. Being part of such a diverse group of people deeply broadened my scope on environmental challenges and opportunities. I would also like to thank the ENR staff, especially Bjargey and Þröstur for their help and support throughout my studies. Finally yet importantly, two persons have greatly supported me and sacrificed their own time in making it possible for me to pursue my studies and this research: my wife Auður and my mother Alvilda. This work is as much theirs as it is mine.

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1. Introduction

A commonly perceived dilemma in public decision-making revolves around the balance of acting environmentally responsible while also ensuring economic prosperity. For one, negative environmental impact is a frequent byproduct of industrial operations. Public support for economic issues, such as industrial operations, and environmental issues, such as cutting carbon emissions, tends to vary alongside fluctuating economic conditions. Public concern for the environment has been shown to increase during eras of economic prosperity, though during economic recessions this concern backtracks, with the focus shifting towards resolving economic difficulties (Dunlap & Scarce, 1991; Elliott, Regens, & Seldon, 1995; Guber, 2003).

Iceland's first oil exploration, in an offshore area called Dreki in the North Sea, offers an interesting insight into the public perception of economic and environmental issues, and the interplay between them. The proposed extraction is generally thought to entail positive economic effects, while also raising environmental concerns related to carbon emissions and potential oil spills (NEA, 2007). The oil exploration emerged formally on the agenda after the international economic recessions in 2008, which heavily affected the Icelandic economy and society. Polls revealed widespread support for the issue shortly after its arrival on the public scene (Valþórsson, 2013), but no recent information on public support has been published.

Using the oil exploration in the North Sea as a case study, the aim of this thesis is to explore the relationship between the perception of economic conditions and attitudes towards environmental, and economic issues. Importantly, the focus of the thesis is on public perception of the economic conditions, not the objective state of the economy, which is the popular reference point in research on public decision-making. The thesis furthermore attempts to reveal how everyday exposure to economic information, such as in the media, may indirectly influence public opinion on such issues. This influence of exposure is a potentially significant process in the formation of public opinion. While an increased understanding of the processes influencing public opinion is interesting in itself, it can also prove vital in increasing support for environmental matters. Understanding the influence of economic information on public opinions of environmental matters can provide a better perception of how concerned parties (e.g. the media or elite groups), consciously or unconsciously, may influence decisions related to the environment.

The thesis is divided into a literature review, a research report and a concluding discussion. The literature review begins with a short overview of the current understanding of

attitudes and attitude change. This is followed with sections covering the economic influence on public attitudes and the relationship between individual perceptions of the economy and the real economic conditions. Theories on framing, priming and media agenda setting are discussed in the next section of the review, which is then concluded with sections covering the economic influence on public attitudes related to oil-drilling and the oil exploration in Iceland.

The research report is divided into two studies. The first study tests the general hypothesis that there is a significant relationship between the perception of economic conditions and public attitudes towards three specific issues: oil exploration in the North Sea, aluminum production in Iceland, and immigration. The second study examines the potential impact of increased accessibility of the economy in thought, when considering related issues, hypothesizing that exposure to different evaluations of economic information may result in different attitudes towards the oil exploration. The study draws from knowledge in psychology, political science and media research on the related concepts of framing, priming and media agenda setting (Chong & Druckman, 2007; Iyengar & Kinder, 1987; Krosnick & Kinder, 1990; McCombs & Shaw, 1972; Nelson & Oxley, 1999; Petty & Cacioppo, 1986; Scheufele, 1999, 2000; Scheufele & Tewksbury, 2007). The way in which information is presented to the audience (framing) and what information is or is not presented (agenda setting) influences opinions on issues related to the information, e.g. by increasing the information accessibility in thought (priming). The study draws attention to how exposure to information (e.g. economic conditions) that does not directly mention an issue (e.g. oil exploration) influences issue approval, a concept termed as incidental framing in this thesis.

The concluding discussion gives a summary of the research results and draws connections between it and the broader literature while discussing its implications and suggestions for further research.

The results of the two studies indicated that perceptions of economic conditions were a bigger influence on attitudes towards environmental and economic issues among those who perceived themselves as being unfamiliar with the specific issue. The unfamiliarity appeared to increase the weight given to the economy as an attitude element. Furthermore, exposure to economic information influenced attitudes towards the oil exploration, even though one's perception of the economic conditions may, in general, not have been an indicator of oil exploration attitudes. The different valence of such economic information can independently affect public perception of economic conditions, and interact with the timeframe context in which the information is presented. This brings attention to the influence that both frequent

media coverage and coverage context can play in shaping public attitudes towards various issues, the latter of which should receive greater attention within relevant environmental behavior disciplines.

2. Literature Review

2.1 Attitudes

Attitudes have been defined in several ways (e.g. Eagly & Chaiken, 1993; Fazio, 1995; Petty & Cacioppo, 1981), but most definitions underline some sort of an evaluative judgment about an object, issue or a person. An attitude can be perceived to vary along two different dimensions in *valence*, or whether it is a positive or a negative evaluation, and in *strength*, or how strongly one feels about the attitude evaluation (Eagly & Chaiken, 1993). Together, variations in valence and strength affect the stability and consistency of attitudes, and how they influence information processing and behavior (Petty & Krosnick, 1995).

Three important and interrelated aspects need to be considered when addressing the nature of attitudes: content, structure and function (Maio & Haddock, 2015). Starting with attitude content, attitudes hold *cognitive*, *affective* and *behavioral* components, according to the multicomponent model (Eagly & Chaiken, 1993). The cognitive components refer to beliefs, thoughts and attributes associated with the attitude object/issue. Taking an oil-drilling project as an example, cognitive components of the attitude could include beliefs that the oil-drilling is good/bad, or that the oil-drilling is good/bad for the economy/environment. Affective components refer to emotions or feelings associated with the attitude object. For example, thinking of an oil-drilling project could make someone feel happy/sad, or excited/worried. Behavior components refer to past experiences or behavior regarding the attitude object. In the oil-drilling example, if someone recalls protesting against an oil-drilling project in the past, this will infer a negative attitude of the issue. While these components have been shown to be distinct from each other (see Breckler, 1984), and may in some instances differ in valence, studies reveal they are usually dependent on each other on some level and positively correlated (Maio & Haddock, 2015). In particular, maintaining positive beliefs about an attitude object is associated with positive affective responses; the cognitive and affective components may thus influence one another, and influence behavior.

Attitude structure has to do with how the attitude content information is organized along the overall attitude valence. Generally it is assumed that positive beliefs, feelings and behaviors inhibit the occurrence of negative beliefs, feelings and behaviors (Maio & Haddock, 2015). This perspective holds that positive and negative elements are at opposite ends of a single dimension, and people tend to experience a single point on this dimension. Conversely, a two-dimensional view holds that content information is organized through one dimension holding few or many positive elements of an attitude, and another dimension holding few or many negative elements (Cacioppo, Gardner, & Berntson, 1997). The two-

dimensional perspective does not exclude the possibility that some attitudes fit to a single dimension, but it does include the possibility that some attitudes may have both positive and negative elements, which could lead to *attitudinal ambivalence*. This is important in situations such as considering complex political and social issues, which can be perceived to have a variety of elements, both positive and negative. Here, element salience becomes an important factor in influencing overall attitude valence due to a process defined as *response polarization* (Maio & Haddock, 2015). If people are highly ambivalent towards an issue, their attitudes are more strongly influenced by something in their environment that highlights certain attitude elements (positive or negative). Their attitude towards the issue therefore becomes more favorable when positive elements are highlighted or salient than when negative elements are salient. Non-ambivalent people, on the other hand, are less strongly influenced by salience of positive/negative elements (Bell & Esses, 2002).

The third aspect of attitudes is their function, or the purpose/reason for a specific attitude of an individual. A number of function models have been proposed throughout the years (see Maio & Haddock, 2015, for an overview), but the most widely applied model can be attributed to the works of Smith et al. (1956). According to their model, attitudes serve three primary functions: *object-appraisal*, *social-adjustment* and *externalization* (Smith, Bruner, & White, 1956). Object-appraisal refers to the function of attitudes in summarizing negative and positive elements of our environment, such as helping people to distinguish between beneficial and harmful things. Social-adjustment functions to either identify or dissociate oneself from people that one likes or dislikes, respectively. Externalization serves the function of defending oneself against internal conflict, such as developing negative attitudes towards things that threatens one's self-esteem (Maio & Haddock, 2015).

Incoming information or experience may persuade an individual to alter any or all of the three attitude aspects, leading to a reshaping or changing of one's attitudes. Research has primarily focused on alterations in attitude content, and furthermore, persuasions in the *cognitive* content area. The major models of attitude change are therefore primarily built around the role of cognitions in persuasion, but may also help explain persuasive affective and behavioral influences (Maio & Haddock, 2015). The most influential attitude change models are the Elaboration Likelihood Model (ELM) (Petty & Cacioppo, 1986) and the Heuristic-Systematic Model (HSM) (Chaiken, 1987). While distinct in some ways, these models share important similarities: first, that people desire for 'correct' attitudes, and second, that motivation and ability are determinants of how people process persuasive information. If people are highly motivated and able to process such information or message, the argument

strength should be the key factor in deciding whether a persuasion takes place. On the other hand, if people lack motivation or ability to process information, they may be persuaded to change their attitudes based on simple cues of various nature (e.g. if the message looks to possess many arguments, past experience of the communicator, physical appearance of the communicator, etc.) (Chaiken, 1987; Petty & Cacioppo, 1986).

2.2 Economic Influence on Public Attitudes

The presence of economic matters as elements in environmental attitudes has not gone unnoticed throughout the years. Studies and opinion polls have demonstrated that during times of economic prosperity, both the public's concern for the environment and environmentally responsible behavior increases. However, as the economic outlook darkens these concerns tend to backtrack, with the focus shifting towards resolving the economic difficulties, even at the expense of the environment (Dunlap & Scarce, 1991; Elliott et al., 1995; Guber, 2003). Nonetheless, since the 1970's the industrialized world has seen a general trend in the public placing greater weight on environmentalism (Dunlap & Scarce, 1991). Inglehart (1995) attributed this trend to a broader value shift within society, which he defined as 'post-materialistic.' The value shift was found to be a result of prolonged eras of economic growth, which provided emerging generations with secure pre-adult economic experiences, allowing them to broaden their value scope beyond that of economic and physical security (Inglehart, 1995; Inglehart & Abramson, 1994).

Following the global economic recession beginning in 2008, this value change may have taken a sharp turn. Research on public opinion of climate change in Europe and the USA showed that the economic outlook considerably influenced public assessment of the threat and nature of climate change (Brulle, Carmichael, & Jenkins, 2012; Scruggs & Benegal, 2012; Shum, 2012). Scruggs and Benegal (2012) revealed a sharp decline in climate change mitigation priorities following the 2008 economic recession, and even more strikingly, a change in general beliefs about the seriousness of climate change. Shum (2012) found that quarterly changes in GDP growth rates affected climate change attitudes: the perceived seriousness of climate change dropped when the economic outlook was gloomier.

When the outlook of certain issues is particularly grave, it is rational that people would prioritize progress on these issues over others, especially if the matter is perceived to be of high importance. Accordingly, scholars had already pointed towards a decline in environmental prioritizing during economic and socio-economic difficulties (Guber, 2003). However, there may be a more profound relationship between the public's attitudes towards

the economy and the environment: studies have shown that people may resort to actively denying the existence of climate change, thereby releasing them from the burden of prioritizing either economic prosperity or the environment (Scruggs & Benegal, 2012).

A contributing factor as to why people deny the existence of climate change, rather than denying the economic difficulties, is that public importance on economic values rises during economic recessions. (Singer, 2010), subsequently leading to higher salience of economic issues in thought. Meanwhile, environmental issues have generally been shown to attain low salience levels (Dunlap & Scarce, 1991), especially when compared with economic matters. Because of response polarization, more salient economic elements may have a stronger influence on public attitudes than environmental elements.

When different values (in the case of climate change, economic and environmental) seem to clash in a particular circumstance, a common evasion tactic is to ignore or deny information that conflicts with these values. This value clash has been labeled ‘cognitive dissonance’ (Brehm & Cohen, 1962; Festinger, 1962). Scruggs and Benegal (2012) have suggested that this tendency could explain the decline in climate change beliefs following the economic crisis. This could also be explained by the related concept of motivated reasoning, where the motivation to arrive at a particular desirable conclusion enhances the use of reasons most likely to produce the appropriate result (Kunda, 1990). Interaction between cognitive dissonance and/or motivated reasoning, and the salience difference between environmental and economic issues, especially during recessions, may effectively explain why denying the existence and seriousness of environmental issues can become a popular option when these different values seem to clash.

Cognitive dissonance and motivated reasoning may play important roles in decreasing environmental concerns during economic recessions, but there is also reason to believe that even when the economic outlook is not particularly gloomy, it can still play an influential part in public attitudes. While the public prioritizes the economy highest during recessions, research shows that for the past six decades or so, economic and socio-economic issues almost always rank among the most important issues/problems for the public (Jennings & Wlezien, 2011; Jones & Baumgartner, 2004).

The high salience of economic issues gives reason to believe that they can become elements that influence public attitudes towards other issues, and the literature supports this notion. In addition to the previously mentioned issue of climate change, the economy has been shown to influence attitudes towards a variety of social and political issues, including immigration (Kehrberg, 2007), health care (Blomberg & Kroll, 1999) and voting behavior

(Lewis-Beck, 1986; Singer, 2010). Socio-economic conditions have even shown to have a bigger effect on public attitudes than personal economic experiences (Lewis-Beck, 1986; Mutz, 1992).

2.3 Perception and Reality of Economic Conditions

Previous studies addressing the relationship between the economy and public opinion on various issues have mostly focused on real economic conditions, assessing both changes in public attitudes towards these various issues over time and whether these changes can be traced to different economic conditions (Blomberg & Kroll, 1999; Kehrberg, 2007; Lewis-Beck, 1986; Singer, 2010). This can be useful observing general relationships, but it does not explain why these relationships occur. By not making a distinction between the economic conditions and the respective public perception, the possibility that the economic conditions may not entirely reflect the public perception on the economic conditions at every given moment time is neglected.

Real economic conditions may, in general, be a viable indicator of public perception of the economy. Studies have shown that the public perception of the economy, or the 'subjective economy,' follows the real or 'objective economy' (De Boef & Kellstedt, 2004; Erikson, MacKuen, & Stimson, 2002). While De Boef and Kellstedt (2004) found that, over time, real economic indicators accounted for up to 75% of public attitudes on the economy, there were still times in which the public perception turned away from the economic trend. Furthermore, there are some observed complications in the relationship between the subjective and objective economy that give rise to the use of specific measures beyond observing the real economic conditions to realize how public *perception* of the economic conditions influences public attitudes towards environmentally related issues.

First, media influence on public economic perception needs to be addressed. While media coverage of the economy has shown to follow the real economic conditions (Goidel & Langley, 1995), it tends to emphasize and report more closely on negative economic conditions, rather than positive (Goidel & Langley, 1995; Hester & Gibson, 2003). This, in turn, can amplify public perception of economic conditions during economic downturns beyond the mere changes in the economy. Negatively framed media coverage has been shown to be a significant indicator for public perception of economic conditions, while positively framed coverage has not (Goidel & Langley, 1995; Hester & Gibson, 2003).

The difference effects of positively and negatively framed media coverage becomes strikingly apparent for public perception towards future economic conditions. This may stem

from the fact that public evaluation of the economy becomes more dependent on media information as the evaluation goes further into the future, when making judgments based on personal experiences becomes less suitable than when such evaluations are made in the present (Hester & Gibson, 2003; Mutz, 1992). There is also evidence that peoples' decision-making is much more influenced by perceived future economic conditions, rather than past or current ones (MacKuen, Erikson, & Stimson, 1992). The difference in reaction towards economic information in different timeframe perspectives may also be related to the different ways that people mentally represent events based on the temporal distance. According to temporal construal theory people are more likely to perceive the essence of events in few abstract features as temporal distance expands, whereas in the present or near future people are likelier to perceive concrete, incidental details (Trope & Liberman, 2003).

An additional issue to consider is how accurately public perception of the economy reflects real economic conditions, and how strongly the public values the economy during different economic periods. Economic recessions have been found to increase public attention on economic matters (Headrick & Lanoue, 1991), as well as the importance of economic values (Singer, 2010). Economic recoveries unfold another complication for economic perception. During recessions, there seems to be a general agreement within society on the perception of bad economic conditions, whereas economic evaluations are divided by partisan and ideological lines during recoveries. People who do not support or adhere to the ideologies of the acting governing parties tend to perceive economic conditions as being worse than those who do support or adhere to the acting parties' ideologies (Stanig, 2013).

A final notable point is the complication in interpreting 'good' or 'bad' economic conditions while studying the effects of economic conditions on public opinion. While overall conditions may essentially seem like good measurement indicators, research has shown that people are somewhat more sensitive to changes in economic indicators – such as inflation, unemployment rate, and GDP – than the absolute ratings/values themselves (Headrick & Lanoue, 1991; Hester & Gibson, 2003; MacKuen et al., 1992). As an example, people may consider a 2% decrease in inflation from the previous month a sign that the economy is in good shape, irrelevant of whether the inflation is actually 10% or 20%. Research relying solely on absolute economic indicator ratings, or solely on *changes* in these ratings, may lead to inaccurate results.

There are benefits to using public economic perception as a basis for investigating the relationship between economic conditions and public attitudes on environmental issues. These benefits arise from several factors: the combined effects of primarily negative media coverage

on environmental conditions and the reliance on media for estimating future economic conditions; the varying levels of attention and importance placed on economic values between recessions and recoveries; and the different evaluations of economic conditions stemming from differing political ideologies. Overall, this investigation intends to provide a different insight into the relationship between economic factors and public attitudes towards environmentally related issues, as opposed to simply employing real economic conditions as a basis for examination.

2.4 Framing, Priming and the Media

Individuals hold certain cognitive structures that represent personal knowledge and stored ideas/beliefs related to specific objects (Entman, 1992; Shen, 2004). These cognitive structures, or ‘schemas,’ are the basis from which information processing at the individual level takes place (Entman, 1993). Information, events, or messages interact with certain schemas through which the information is interpreted. This interpretation also affects attitudes and opinions towards the information objects (Shen, 2004). As these schemas are constructed at the individual level, the same information may yield different effects on attitudes between individuals as it is processed through the differently constructed individual schemas.

Framing, as the term is most commonly understood in political science, is a process in which people develop a particular conceptualization of an issue (Chong & Druckman, 2007) in the form of a particular problem definition, causal interpretation or moral evaluation (Entman, 1993). While psychologists utilize the term ‘individual schemas,’ this concept may be more commonly understood as ‘frame in thought’ within political and media research (Chong & Druckman, 2007; Scheufele, 1999). It is important to distinguish this term from ‘frames in communication,’ in which messages or information is exposed to an individual by a communicator, such as the media (Chong & Druckman, 2007; Gamson & Modigliani, 1989, 1994). By selecting certain pieces of perceived reality, the ‘frame in communication’ thus works with and influences the ‘frame in thought’ (Entman, 1993). This conceptual understanding of framing differs somewhat from another common approach to framing that originates in psychology (Scheufele & Tewksbury, 2007), where framing effects, such as subtle wording alterations, account for observed differences in public choices (Tversky & Kahneman, 1981).

There are a few ways in which issue framing in communication may affect public attitudes. The first, and perhaps most recognized, is persuading the audience of a certain reality, or of a belief on the causality between an attitude object/issue and an attitude element

(Nelson & Oxley, 1999; Petty & Cacioppo, 1986). This would be the case, for example, if a message effectively persuaded the audience that an oil-drilling project would have positive economic consequences, which again can influence attitudes changes towards the project.

Another way in which issue framing may affect attitudes is by altering or influencing the importance that an audience attaches to particular attitude elements (Gamson & Modigliani, 1989; Nelson, Clawson, & Oxley, 1997; Nelson & Oxley, 1999). An example of such framing effects would be if a message effectively influenced people to place greater importance on environmental factors than economic factors when evaluating the desirability of an oil-drilling project.

There are reasons to believe that framing effects of this nature may be stronger than that of the persuasion framing effects (Nelson & Oxley, 1999). A message has a stronger probability to induce framing effects when it interacts with pre-existing schemas and beliefs of an individual (Entman, 1993; Shen, 2004), even if the message content is highly biased or even inaccurate (Teel, Bright, Manfreda, & Brooks, 2006). Therefore, it may be more effective to get individuals to think within specific, existing cognitive elements when evaluating an issue, rather than trying to alter their already reasonably constructed beliefs. Consider, for example, trying to persuade someone to agree to an oil-drilling project when they already believe that the economic consequences would be positive and environmental consequences negative. The chances of getting an agreement for the project is greater if the messenger tries to focus the receiver's attention on the economic factors of the project, rather than trying to change the receiver's perception of environmental consequences.

While Nelson, Oxley, and Clawson (1997; 1999) believe that the framing occurs mostly through an increase in importance of specific attitude elements following message exposure, the priming theory asserts that framing effects can transpire merely through increased element accessibility in thought (Iyengar & Kinder, 1987; Krosnick & Kinder, 1990; Scheufele, 2000). Faced with a judgment or choice, instead of carefully examining and weighing all plausible considerations, people usually employ simple intuitive shortcuts (or heuristics, see Chaiken, 1987), one of which is to rely upon information that is most accessible in memory or spontaneously comes to mind at a given time (Krosnick & Kinder, 1990). While message exposure can act as a mediator for increased attitude importance, it can also simply affect attitudes in itself with increased accessibility.

The main gateway for message exposure and political communication to audiences is through mass media, which therefore has the capacity to considerably shape public attitudes on various issues, whether a deliberate strategy or not. Termed as 'agenda setting,' the media

emphasis on certain issues can shape the importance attached to these issues by the media audiences (McCombs & Shaw, 1972; Scheufele & Tewksbury, 2007), and can be viewed as the media approach of issue importance framing. Priming has been defined, especially in relation to the media, as a process in which media influences its audience to use specific, tailored issues in their political evaluations (in reference to candidates, elected officials or parties) (Iyengar & Kinder, 1987; Scheufele & Tewksbury, 2007). Priming in this context is not equivalent to, but rooted in, the accessibility increase premises of priming theory, as frequent media exposure can lead to increased accessibility in thought.

Existing practice in framing research has been rather focused on ‘deliberate framing,’ but less focus has been given to the incidental ways in which framing can affect attitudes. In this research, deliberate framing means that an established relationship is hinted between an element and an attitude object. Irrelevant of the exact nature of that framing, whether it is by persuasion, affecting importance, or priming certain elements or issues over others, a link is established between an element and an attitude object, suggesting a pathway to which the individual’s cognitive processing should align.

For example, measuring differences in public support for an oil-drilling project when framing the consequences as either good for the economy or bad for the environment, rational as it may sound, does still imply a specific effect – positive for the economy, negative for the environment. Two potential complications emerge in this example. First, the mere exposure to a frame claiming either positive or negative effects from a project may alter public opinion on that project just by presenting it in a positive or a negative way. Second, there is an unaccounted possibility that framing, by simply priming the economy or the environment, can incidentally arouse emotions and influence thoughts related to those fields, thus making them more accessible in memory before even making the connection to oil-drilling. This could affect attitudes towards the drilling, as the influence of incidental emotions on public decision-making has been demonstrated on many occasions (Andrade & Ariely, 2009), such as in economic decision-making (Lerner, Small, & Loewenstein, 2004).

This incidental framing, or priming elements in thought without necessarily establishing a link to a certain issue, may have a substantial influence on public attitude formation, although it has received minimal academic attention. Incidental framing may fall under the broader term of agenda setting, but agenda setting does not make a clear conceptual distinction between instances where issues reported become elements in attitude formation independently, or are suggested to do so within the reporting by the media. By making this distinction and utilizing the term ‘incidental framing,’ this research highlights that, at a given

time, issues on the agenda that are heavily reported by the media can become elements in attitude formation on other issues being reported at the same time, without the media necessarily presenting the connection.

In addition to being one of the most widely mentioned topics in the news and media, the economy and economic issues have also been shown to be one of the most important issues to the public (Jennings & Wlezien, 2011; Jones & Baumgartner, 2004). Of course, there is likely to be a positive feedback relationship between the media and public values: the public undoubtedly feels that economic matters have substantial and broad influences on their lives, so there is a demand for the media to report on the economic outlook. Given the frequent media coverage on economic matters and its importance to the public, there is reason enough to suspect that an individual's economic perception can serve as an element that influences attitudes on other issues, and their cognitive constructs allow for a conscious or unconscious connection to economic matters.

2.5 Economic Influence on Oil-Drilling Attitudes

Economic conditions are influential in public attitudes towards oil-drilling (Bolsen & Cook, 2008; Smith & Garcia, 1995). Through the 1980's, support for oil-drilling steadily declined in California (Smith & Garcia, 1995), which aligns with Inglehart's (1994) post-materialistic theory of a generational shift towards environmentalism. Furthermore, age has been shown to be a strong predictor for fossil fuel preference: increasing age correlates with more positivity towards fossil fuels (Greenberg, 2009; Smith & Garcia, 1995). In 1980, 60% of people in the U.S.A. supported offshore oil-drilling, but in 1989 this dropped down to just above 20% before moving up to 34% again in 1990. The drop was most likely because of the Exxon Valdez oil spill in March, 1989 (Smith & Garcia, 1995). Public opinion polls measuring preferences in oil exploration in the Arctic National Wildlife Refuge in Alaska through the 1990's and onwards to 2006 showed majority opposition to the idea with only two exceptions. In 2006, when the crude oil prices went over 60 USD a barrel, the attitude towards explorations shifted to positive (Bolsen & Cook, 2008).

The Deepwater Horizon spill in 2010 greatly surpassed the volume of oil spilled into the ocean during the Exxon Valdez spill (Bishop, 2014). While the opposition to oil-drilling rose when the Deepwater Horizon well started leaking, it had already dropped before the leak had been stopped (Bishop, 2014), and the overall drop in support for offshore oil-drilling following the event was not significant (Lilley & Firestone, 2013). The modest public reaction following the Deepwater Horizon comes as a surprise, especially when compared with the

reaction following the Exxon Valdez spill. A possible explanation is that the economic difficulties America had been experiencing prior to the leak may have dampened the predicted drop in support for offshore oil-drilling.

While the immediate observed reaction towards offshore oil-drilling was a drop in support after both the Exxon Valdez and the Deepwater Horizon spills, support levels rose quickly again; in the case of Deepwater Horizon, support levels even rose while the spill was still occurring. This may be due to different salience levels of the oil spills in public thought during that time. The immediate reaction after the spills occurred resulted in wide media coverage, increasing the salience of spill accidents in people's mind, rendering them more accessible in memory when considering support or opposition towards offshore oil-drilling. As the media focus on the issue dropped, thereby reducing issue exposure to the public, the salience of oil spills declined in public thought, making them less significant in offshore oil-drilling attitude formation.

The Smith and Garcia (1995) and Bolsen and Cook (2008) studies revealed that, since the 1980's, there has been a slow decline in oil-drilling support. This decline, however, can at least be temporarily dampened by a change in economic outlook, such as rising prices for oil on international markets (Bolsen & Cook, 2008).

2.6 Oil exploration in Iceland

Primarily recognized for being among leading nations in renewable energy production, Iceland has now entered the field as a possible developer of fossil fuels. In 2013 and 2014, the *National Energy Authority* of Iceland (NEA) granted three licenses (one has since been withdrawn) for offshore prospecting, exploration, and production of hydrocarbons at the Dreki-Area.

The Dreki-Area is an ocean area in the North Sea, approximately 300 km south of Jan Mayen and 350 km northeast of Iceland. Weather conditions in the area, particularly icing and fog, could bring about challenges should production proceed (NEA, 2007). Additionally, the vast distance from land and the harsh weather conditions could delay and complicate rescue operations, should any accidents occur.

Should development materialize, fossil fuel production is anticipated to lead to positive effects for the Icelandic economy (NEA, 2007). During construction and production, GDP could rise and government income could increase substantially through taxes and other levies that might specifically be applied in the industry. The Icelandic public and politicians undoubtedly glance to their Nordic neighbors in Norway, where oil production has created

significant wealth and is a fundamental element in their economic prosperity, as a promising role model.

Offshore oil exploration make a good case study for assessing how economic conditions influence public attitudes and opinions on environmental issues, and to what extent. First, it presents a strong case for an ‘economy versus environment dilemma,’ with production expected to yield positive economic effects, while simultaneously risking grave environmental consequences in the form of oil spills and climate change. This has been shown to materialize in poll trends in other countries, with shifts in support for explorations and drilling easily attributed to temporary economic and environmental conditions (Bishop, 2014; Bolsen & Cook, 2008; Smith & Garcia, 1995).

Whether this general observation holds for the contemporary oil exploration in Iceland remains to be seen, as a few potential complications arise. For one, this is the first time Iceland has engaged in fossil fuel production activities. It is a new issue on the horizon, and the Icelandic population has not yet formed an opinion on the matter. Furthermore, the issue has arguably received a rather modest coverage by the media, and has not been comprehensively discussed in the Icelandic parliament. There does not appear to be a clear division regarding the oil exploration across the political spectrum, with most parties appearing rather favorable towards the exploration and only one party (*the Social Democratic Alliance*) officially claiming to oppose of the oil exploration at the time of the study (Kolbeinsson, 2015). The issue may thus be projected to be low in salience among the public, with few cognitive structures previously established between the issue and other variables (or attitude elements) that commonly affect public attitudes towards similar issues elsewhere.

Given a reasonable level of cognitive reasoning ability, the probable lack of familiarity from the Icelandic public concerning the oil exploration could also mean that popular attitude elements could more easily affect the less formulated attitudes. Low familiarity is typically associated with weak attitude strength which, as Petty and Krosnick (1995) noted, makes attitudes more vulnerable to changes. People with low familiarity would therefore be more likely to process and develop attitudes based on frequently and generally used cognitive pathways than those highly familiar with an issue, who may think and process information through more specifically constructed pathways. Low familiarity with issues can therefore influence people to use salient and other issues (such as the economy) as attitude elements in their attitude formation.

Few complications unfold when considered in the context of framing. While a communicating frame will generally have a better chance of influencing the attitudes of an

individual who lacks familiarity on a given issue, the frame must connect an attitude element familiar to the individual with the unfamiliar issue in order to increase the efficacy of the framing message. Incidental framing gives no such guarantees, as it only offers an exposure to a possible attitude element, but does not mention the particular issue or draw any connections to it. The effects of such framing are therefore hard to predict, and very low familiarity might be considered a disadvantage in such cases.

While the issue of fossil fuel production is new on the agenda in Iceland, Icelanders in general should still be reasonably familiar with the potential economic benefits of such an industry, especially due to the nation's proximity to Norway. People may therefore use their perception of the economy as a guiding point to their position on oil exploration at the Dreki-Area, especially if they are otherwise unfamiliar with the project and its potential impacts.

3. Study 1

In Study 1 the relationship between the perception of economic conditions and the opinion on specific environmental issues was examined, with a special focus on oil exploration and production at the Dreki-Area of the North Sea. First, contemporary public attitudes towards the oil exploration were explored. This was done in order to establish a more knowledgeable starting point for the case study, as little was known about public opinion on the issue. At the time of the present study, only one survey (from January 2013) on the subject had been made public, which found substantial support (80%) for the extraction, distributed uniformly across residents within the country and political orientation (Valþórsson, 2013). Approximately three years had gone by between the 2013 survey and this study's survey. It was expected that the support had declined over that period, based on the following observations:

Iceland went through substantial economic difficulties following the global economic recession around 2008, with subsequent drawbacks in GDP and increased unemployment. Since then, economic conditions in Iceland have steadily improved. Inglehart and Abramson (1994) found that prolonged eras of economic growth can broaden people's value scope beyond that of economic and physical security, so it was likely that the economic improvements in the three years since the 2013 survey had decreased approval of the oil exploration. Related are the findings of Singer (2010), which determined that the importance of economic issues rises following recessions. When considering these factors, relative importance of the economy versus other issues, such as the environment, was predicted to have decreased since the 2013 survey.

Based on the findings of Smith and Garcia (1995) and Bolsen and Cook (2008), support for oil-drilling was predicted to correlate with decreasing education, and increasing age and political conservatism. Previous research has found women to be at least moderately more concerned about the environment than men (see, e.g., Dietz, Kalof, & Stern, 2002; Mohai, 1992), so oil exploration approval was thus expected to be lower for women than men.

Respondents' self-reported familiarity with the possible impacts of oil production at the Dreki-Area was also measured. Based on the limited coverage of the issue in media and the fact the Icelandic population had no previous experience with domestic oil-drilling activities, familiarity and attitude strength was expected to be rather modest. Respondents were also asked to rate the issue importance of potential oil production. Again, due to limited

media coverage and no past experience, the importance of oil production was expected to rank as rather neutral among the public.

Respondents were asked which of three factors (social, economic and environmental) they considered to be most important in their evaluation of potential extraction. Results would be hard to predict, but could give an indication of the level of which perception of economic conditions may affect approval of the oil exploration. If the rate of respondents reporting environmental factors to be most important exceeded the frequency in which economic and social factors are mentioned, the perception of economic conditions could have limited effects and approval of oil exploration. The less people considered socioeconomic factors to weigh in their evaluation, the less likely it was that economic conditions would matter in their approval of oil exploration.

Furthermore, whether perception of economic conditions is a significant predictor for oil exploration approval was explored. Based on previous research, relating economic conditions to attitudes on various issues, and more specifically to oil-drilling and production (Bolsen & Cook, 2008; Smith & Garcia, 1995), *it was hypothesized that perception of economic conditions as good is negatively correlated with oil exploration approval (H1).*

It was also suggested that there may be an interaction between the perception of economic conditions and self-reported familiarity of the impacts of a possible oil extraction at the Dreki-Area, which may influence oil exploration approval. It was hypothesized that *among those reporting low familiarity with the oil-drilling, the perception of the economic conditions would be a stronger indicator of oil exploration approval than among those reporting high familiarity (H2).*

The effects of perception of economic conditions on two other issues were also measured, for comparison. First, it was hypothesized that perception of economic conditions as good is negatively correlated with approval of the operations of aluminum producers in Iceland (H3). The attitude strength of the issue should be greater than that of the oil exploration, as it is more familiar within the Icelandic community, and sharply divided along environmental and economic ideological lines: aluminum production requires huge amounts of energy, supplied in Iceland by damming rivers for hydropower, which is a notable source of environmental debate in Iceland (see Magnason, 2006).

Second, it was hypothesized that perception of economic conditions as good is positively correlated with an optimistic public opinion on the benefits of immigrants to Icelandic society (H4). While it benefits the study to explore a relationship that has been observed elsewhere (Kehrberg, 2007), there is also a benefit to exploring an issue highly

salient at the time of the study investigation, and comparing it with the results of the oil exploration approval. Opinion on immigrants qualifies in this sense, as the affairs of refugees and immigrants in Europe and Iceland was a frequent topic in the Icelandic media during the study investigation.

3.1 Method

3.1.1 Participants. A total of 635 people (320 women and 315 men) participated in Study 1, ranging in age from 19 to 90 years old ($M = 50.1$ years, $SD = 15.4$ years). Participants voluntarily answered a web-based questionnaire received by email, as members of a survey response program supervised by the *Social Research Institute of Iceland (SRI)*. This respondent group consists of thousands of members who have been randomly sampled from the Icelandic registry and agreed to participate in an SRI survey response program (receiving surveys via emails 1-2 times a month), making it a nationally representative sample. Of the 580 participants who provided their highest level of education, 50.9% had finished a university degree, 12.8% had finished a theoretical college degree, 21.3% had finished a technical college degree and 11.9% had finished elementary school. A total of 506 participants reported their monthly household income: 12.6% had a monthly income below 300,000 ISK, 22.5% between 301,000 and 500,000 ISK, 17.4% earned between 501,000 and 700,000 ISK, 18.4% between 701,000 ISK and 900,000 ISK and 29.1% above 900,000 ISK. Of the 471 stating their political preference, 30.4% claimed to support either of the two parties in government, while 69.6% claimed to support parties not in government.

3.1.2 Materials. A survey questionnaire was constructed and implemented to measure participants' attitudes towards the issues used in the study. The questionnaire included 37 questions in total (background information on the participants such as age, sex, education, household income, etc., is stored in the SRI database and updated 3-4 times a year) (see Appendix A).

Survey items included questions regarding the oil exploration at the Dreki-Area. Approval for the exploration was measured with the 5-point Likert scale item (ranging from 'strongly favor' to 'strongly oppose'): 'Do you favor or oppose the search for oil at the Dreki-Area?' Participants' perceived importance of the issue was also measured with the 5-point Likert scale (ranging from 'very important' to 'very unimportant'): 'How important an issue do you consider the oil extraction on the Dreki-Area to be?' Participants' perceived familiarity with issue was measured with the 5-point Likert scale (ranging from 'very familiar' to 'very unfamiliar'): 'How familiar do you consider yourself to be with the impacts

and/or results which may emerge from an oil extraction at the Dreki-Area, should it materialize?’ Participants were asked to rate the importance of social factors (e.g. employment and regional policies), environmental factors (e.g. oil pollution and carbon dioxide emissions) and economic factors (economic growth and government revenue) in their evaluation of an oil extraction at the Dreki-Area, with 5-point Likert scale items (ranging from ‘very important’ to ‘very unimportant’). Furthermore, participants were asked to choose which of these factors they considered the most important ones in their evaluation of an oil extraction at the Dreki-Area.

One survey item measured participants’ approval of the operations of aluminum producers in Iceland with the 5-point Likert scale item (ranging from ‘strongly favor’ to ‘strongly oppose’): ‘Do you favor or oppose activities of aluminum production companies in Iceland?’ Another item measured participants’ opinion on immigrants, on a 5-point Likert scale (ranging from benefits a ‘great deal’ to ‘would be a great deal better of’): ‘Generally speaking do you think that Iceland benefits from the presence of immigrants, or do you think Iceland is better off without them?’ The item was retrieved from the Eurobarometer 47.1 (1997) survey and translated into Icelandic.

Participant perception of the economic conditions was measured with a 5-point Likert scale item (ranging from ‘very good’ to ‘very bad’): ‘How good or bad do you consider the economic conditions in Iceland to be?’ Their perception of their own financial situation was measured on a 5-point Likert scale (ranging from ‘very satisfied to ‘very unsatisfied’): ‘How satisfied are you with the financial situation of your household?’

Other questions, mostly related to the environment and the economy were acquired and translated from open access survey databases, the ISSP Environment III survey, World Values Survey: Wave 6, the Eurobarometer 69.2. (See Appendix I).

All questions were revised and modified by a professional at the SRI in order to make sure the wording followed standard methodological rules.

3.1.3 Procedure. In total 1,040 individuals were contacted via email by the SRI for participation in this study, and 635 (61%) of those initially contacted agreed to respond. The email stated that the questionnaire was the SRI’s monthly national policy survey, which is a survey that the SRI sends to a random sample of their survey response program, and can include questions on a variety of issues concerning national issues in Iceland. The email included a web link that redirected participants to the web-based questionnaire. Survey instructions stated that participants were under no obligation to answer any of the questions.

Participants were able to respond to the questionnaire for roughly a month (from December 10, 2015 to January 13, 2016). Those who had not completed the questionnaire after a period of time were sent regular reminders during this response period.

The following passage (translated from Icelandic) appeared before the questions regarding the oil exploration, with the purpose of reminding/familiarizing respondents with the issue before answering:

'In recent years, the Dreki-Area, North-East of Iceland, has been explored for fossil fuel (oil and gas). Should extraction proceed, it may bring various influences on the nation's society, environment, and the economy.'

Each page of the web-based questionnaire contained between 7 and 12 questions, and participants clicked a 'next' or 'previous' button on each page in order to navigate between the different pages of the questionnaire. The last page of the questionnaire thanked the participants for their participation and included a 'submit' button that participants clicked to finish the survey and submit their answers. Answers from participants who did not finish submitting them were recorded none the less, and included in the calculations when possible.

The dependent variables used in the Study 1 model calculations were the survey items which assessed 'approval of the oil exploration', 'approval of the operations of aluminum producers in Iceland' and 'opinion on the benefits of immigrants to Icelandic society.' In addition, the effects of seven demographic variables which some of whom have been shown to correlate with environmental attitudes before were also tested: age (Smith & Garcia, 1995; Bolsen & Cook, 2008), education (Smith & Garcia, 1995; Bolsen & Cook, 2008), political ideology (as government party support) (Smith & Garcia, 1995; Bolsen & Cook, 2008), gender (Mohai, 1992), household income, 'perception of economic conditions' and 'satisfaction with own financial situation.' There were two reasons for grouping together those who support either of the government parties against those who support nongovernment parties. First, the two parties in government in Iceland at the time of research (the Progressive party and the Independent party) are acknowledged to be further to the right than the other parties, making it a decent left/right dichotomous variable. Second, supporters of parties in government have shown to be systematically more positive on the economic outlook when compared to supporters of nongovernmental parties (Stanig, 2013). This is useful to consider when observing the effects of the perception of economic conditions on public attitudes.

The survey item *Familiarity* of possible impacts of the oil extraction (described in the Materials subsection of the Methods section) was also used as an independent variable upon oil exploration approval, with higher value on the variable representing higher familiarity. An

Interaction effect between ‘*Perception of economic conditions*’ and *Familiarity* was also included in calculations.

3.2 Results

Around 47% of participants said that they strongly or somewhat favored the oil exploration at the Dreki-Area, while around 34% said that they somewhat or strongly opposed the oil exploration (see Table I in Appendix C).

A multiple regression analysis including all hypothesized background variables (see Table 1, Model 1) showed that, consistent with expectations, age was a significant negative predictor for approval, government party support was a positive predictor for approval, and those with education levels of elementary school and technical studies were significantly more positive towards the oil exploration compared to those with university education. Gender was not a significant predictor of approval in Model 1. Gender reached significance in Model 2, a model that also included: satisfaction (with household financial situation), perception (of economic conditions), familiarity (with impacts of an oil extraction), and an interaction term (between familiarity and perception) (see Table 1).

Around 39% of participants perceived oil extraction at the Dreki-Area to be a very or rather important issue, while around 25% perceived it to be a very or rather unimportant issue (see Table II in Appendix C). Around 35% of participants considered themselves to be very or rather familiar with the possible impacts/results of an oil extraction at the Dreki-Area, while around 29% considered themselves very or rather unfamiliar with it (see Table III in Appendix C). When considering an oil extraction at the Dreki-Area, around 56% of participants felt environmental factors to be the most important, around 23% felt social factors to be the most important and 21% felt economic factors to be the most important (see Table IV in Appendix C).

Next, the hypothesis that *positive perception of economic conditions is negatively correlated with oil exploration approval (H1)* was tested. A significant relationship was not found between the perception of the economic conditions and oil exploration approval (See Table 4, Model 2). Subsequently, the hypothesis that *among those reporting low familiarity with the oil-drilling, the perception of the economic conditions would be a stronger indicator of oil exploration approval than among those reporting high familiarity (H2)*. was tested. A significant interaction was found between familiarity with the oil exploration and perception of the economic conditions in predicting oil exploration approval (See Table 4, Model 2). Those who reported low familiarity and perceived the economic conditions to be poor were

significantly more approving of the oil exploration compared with those reporting low familiarity and perceptions of the economy as good (see Figure 1 for profile plot of the means). Gender significantly predicted approval, with males more approving of the oil exploration than females.

Table 1

Linear regression for approval of the Dreki-Area oil exploration and the perception of economic conditions and background variables.

Predictor	Step 1		Step 2	
	<i>N</i> = 425		<i>N</i> = 412	
	b (SE)	β	b (SE)	β
Intercept	3.95 (.24)		3.87 (.30)	
Gender (0 = male, 1 = female)	-.20 (.13)	-.07	-.30 (.14)	-.11*
Age	-.02 (.00)	-.26***	-.03 (.01)	-.26***
Government party support (= 1, no = 0)	.97 (.14)	.32***	.87 (.16)	.28***
Elementary school (=1, University = 0)	.65 (.23)	.13**	.53 (.24)	.11*
Technical studies (=1, University = 0)	.35 (.17)	.10*	.34 (.18)	.10
Theoretical studies (=1, University = 0)	.12 (.20)	.03	.11 (.20)	.03
Satisfaction (with household financial situation)			.06 (.07)	.04
Perception (of economic conditions)			.02 (.07)	.01
Familiarity (of impact of oil extraction)			-.15 (.07)	-.11*
Interaction (Familiarity * Perception)			.12 (.06)	.10*

Note. In addition to Satisfaction with household financial situation, the effects of Monthly household income on oil exploration approval were also tested. This decreased the number of participants in the analysis from 412 to 357, thereby decreasing the statistical power of the model. Household income significantly predicted oil exploration approval, and when it was included in the model, gender, familiarity, and familiarity x perception all became marginally significant (in the same direction as before).

* $p < .05$, ** $p < .01$, *** $p < .001$

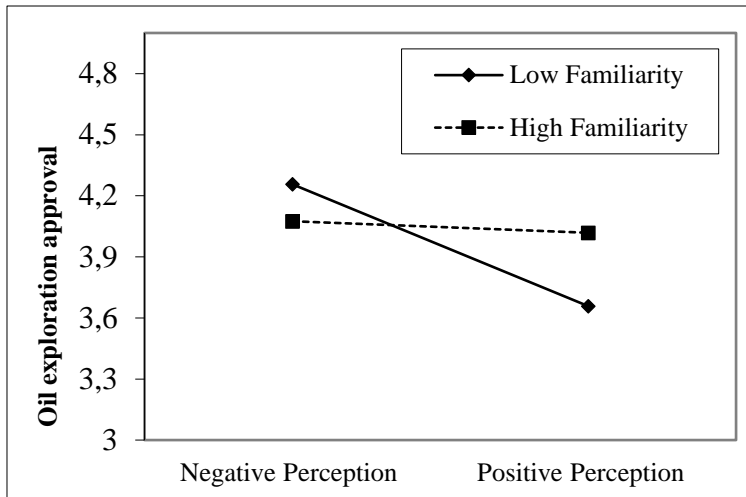


Figure 1. Profile plot of the interaction effects between familiarity and perception of economic conditions on oil exploration approval. Means are centered (= 0) for Perception, SD = 1.06, and for Familiarity, SD = 1.08.

Table 2

Linear regression for approval of the operations of aluminum producers in Iceland and the perception of economic conditions and background variables.

Predictor	<i>N</i> = 433	
	<i>b</i> (<i>SE</i>)	β
Intercept	1.92 (.27)	
Gender (0 = male, 1 = female)	-.36 (.11)	-.14**
Age	-.01 (.00)	-.06
Government party support (= 1, no = 0)	1.00 (.13)	.36***
Elementary school (=1, University = 0)	.05 (.19)	.01
Technical studies (=1, University = 0)	.12 (.15)	.04
Theoretical studies (=1, University = 0)	.13 (.17)	.04
Satisfaction (with household financial situation)	.05 (.06)	.04
Perception (of economic conditions)	.21 (.06)	.17***

Note. Monthly household income was tested as an independent variable but it did not significantly predict with the dependent variable and was omitted from final calculations to increase statistical power of the model.

** $p < .01$, *** $p < .001$

Next, a multiple regression model was run to test the two hypotheses pertaining to aluminum production and immigration. Hypothesis 3 stated that the *perception of economic conditions as good would be negatively correlated with approval of the operations of aluminum producers in Iceland (H3)*. As can be seen in Table 2, the relationship was significant but positive, indicating that positive economic perception was related to being in favor of aluminum production in Iceland, the opposite of what H3 predicted.

Finally, a test of hypothesis 4, *that perceiving the economy as good would predict positive attitudes towards immigration* was supported as seen in Table 3.

Table 3

Linear regression for a positive public opinion on the benefit of immigrants in Icelandic society and the perception of economic conditions and background variables.

Predictor	N = 423	
	b (SE)	β
Intercept	4.10 (.23)	
Gender (0 = male, 1 = female)	.09 (.09)	.04
Age	-.01 (.00)	-.12**
Government party support (= 1, no = 0)	-.62 (.11)	-.26***
Elementary school (=1, University = 0)	-.64 (.16)	-.18***
Technical studies (=1, University = 0)	-.87 (.12)	-.34***
Theoretical studies (=1, University = 0)	-.24 (.14)	-.08
Satisfaction (with household financial situation)	-.01 (.05)	-.01
Perception (of economic conditions)	.11 (.05)	.11*

Note. Monthly household income was tested as an independent variable but did not prove to significantly correlate with the dependent variable and was omitted from final calculations to increase power.

* $p < .05$, ** $p < .01$, *** $p < .001$

3.3 Discussion

Compared with a survey conducted three years ago (Valþórsson, 2013), revealing 80% support for the oil exploration at the Dreki-Area, there appears to be a substantial drop in support for the activities, with 47% of participants saying they strongly or somewhat favor the exploration. A decrease in support follows the expected trend, however the sharp decline observed is more typically expected following the occurrence of a focusing event, such as an offshore oil spilling accident. Public perception of the economic conditions is likely to play a role in this decrease, as the economic outlook improved during this time, i.e. with an increase in GDP and employment and a decrease in inflation (Statistics Iceland, 2015)

The issue of the Dreki-Area oil exploration had received modest coverage in the media and in political discussion since 2013. Nonetheless, exposure since the 2013 survey may have provided a sufficient backdrop to reveal the significance of certain socio-demographic and ideological variables as indicators of approval, as has been shown in previous studies on public attitudes towards oil-drilling. (e.g. Bolsen & Cook, 2008; Smith & Garcia, 1995). The strongest indicators in the current study were government party support – approval correlated with support of the government parties – and age – increased approval correlated with increased age. Gender also exerted an influence on approval in step 2, as it has been shown to do in other issues related to the environment (see e.g., Dietz et al., 2002; Mohai, 1992).

Still, self-perceived familiarity by respondents of the possible impacts of production was low, with only 35% considering themselves very or rather familiar. Furthermore, respondents appeared rather indifferent to the issue's importance, with 36% considering it neither important nor unimportant. This gives reason to believe that the issue is currently not high on the public agenda, a logical result of low media coverage and negligible political discussion.

More than half of the respondents claimed environmental factors to be the most important in their consideration for the feasibility of oil production at the Dreki-Area, trumping economic and social factors in importance. If these self-reported positions hold, it could mean that changes or fluctuations in socioeconomic conditions may not yield a significant influence upon public approval on oil-drilling.

Contrary to H1, the perception of economic conditions was not directly a significant indicator for approval of the oil exploration. The most plausible explanation has to do with the relative importance of the attitude elements. The fact that people reported environmental issues to be the most important in their overall evaluation of a possible oil extraction gives rise to the belief that the perception of economic conditions does not play a big role as an attitude element in this instance. However, among those with low self-reported familiarity of the impacts of a possible oil extraction at the Dreki-Area, the perception of the economic condition had an influence on the oil exploration approval, as hypothesized (H2), with positive perception of the economic conditions correlated with decreasing support for the oil exploration. Furthermore, familiarity was directly correlated with oil exploration approval, with those reporting high familiarity significantly more opposed to the oil exploration than those reporting low familiarity. This may help to explain the Decline in support since the 2013 survey. Although familiarity levels were not particularly high in this study, it is estimated that they have increased since the 2013 survey and will likely continue to increase.

The negative correlation between familiarity and oil exploration approval indicates that oil exploration approval will decrease over time.

Contrary to H3, a favorable perception of economic conditions predicted higher approval of the operations of aluminum producers in Iceland. The issue has historically been debated along environmental/economic ideological lines. On one hand, the operations are in themselves environmentally unfriendly especially considering CO₂ and fluoride emissions and (Canada & Division, 2004) , and the power needed to supply the operations stems from hydropower dams that have considerable impact on the dam area and its immediate surroundings (e.g. Rosenberg et al., 1997). On the other hand, the operations have been claimed to entail economic prosperity and supply employment (Sverrisdóttir, 2005), so some people may feel the operations to be a substantial player in the Icelandic economy. It is possible that those who perceive the economic conditions to be positive attribute those conditions somewhat to the operations of aluminum smelters, while those who perceive the conditions to be negative may not attribute them to the operations in any way, or perhaps hold these operations somewhat responsible for dire economic conditions.

Results confirmed H4, that perception of economic conditions is positively and significantly correlated with the belief that immigrants benefit Icelandic society. This is in accordance with the findings of Kehrberg (2007) who found that with increasing economic hardship and job competition, opinion on immigrants became more negative. While Kehrberg compared attitudes towards immigrants between times of different economic conditions, this observation supports the view that when people perceive the current conditions of the economy to be dire, they will be more likely to question the benefits of immigrants to their country.

The study benefitted from the SRI's large pool of randomly selected voluntary survey respondents, which provided access to a large, nationally representative sample size. Despite the large sample size, there were still some difficulties in the form of missing data. Many respondents did not report their monthly household income, but this could be somewhat accounted for through another survey item asking about satisfaction with the financial state of participants' household. Likewise, many people did not report support for a specific political party. This affected the power of the calculations, but due to the substantial effects of this variable in calculations, omitting it in order to further increase the power was deemed unjustifiable.

Given the results, especially concerning the oil exploration approval, the relative importance of attitude elements is likely to be a prominent influence in public attitudes on

environmentally related issues. As already noted, study results show that over half of participants considered environmental factors to be the most important, relative to social and economic factors, in their evaluation of a possible extraction at the Dreki-Area. Participants may be more likely to base their evaluation of the oil exploration on their perceived impacts on the environment. The perception of economic conditions (as an attitude element) therefore does not come into play as a prominent influence on oil exploration approval, as was expected, if economic factors would have been shown to be more important relative to the environmental ones.

The relative importance of attitude elements can furthermore be established by the fact that economic conditions became a significant indicator for oil exploration approval only among those who perceived themselves more unfamiliar with possible impacts of oil extraction at the Dreki-Area. Those claiming high familiarity may be considered to have a better understanding of how the issue (oil exploration) and its various elements (e.g. environmental and economic) may interact, or how the exploration are likely to affect the various attitude elements. Their attitudes on the exploration may therefore be based on reasonably constructed cognitive pathways between the issue and attitude elements.

Those unfamiliar, on the other hand, may have a limited understanding on such interactions, and possess weak attitude strength, meaning that their attitudes are less stable (Petty & Krosnick, 1995). Due to response polarization, the attitudes of those experiencing ambivalence may rather be shaped by what is salient in their mind when prompted for an opinion, which again is affected by the frequency of exposure of attitude elements (e.g. in the media). According to the literature, environmental considerations, in general, obtain low salience levels (Dunlap & Scarce, 1991). Furthermore, economic issues are usually among the most important to the public (Jennings & Wlezien, 2011; Jones & Baumgartner, 2004), especially during recessions (Singer, 2010), when the public attention on economic matters increases (Headrick & Lanoue, 1991). All this could be attributed to the fact that media tends to report and follow the economic conditions closely, but with greater emphasis during downturns (Goidel & Langley, 1995; Hester & Gibson, 2003). Economic matters are therefore likely to be very salient in memory, compared with other potential attitude elements, thereby playing an influential role on various issues; in this case, the approval of oil exploration among those ambivalent and/or unfamiliar with the issue and its potential impact. As Krosnick and Kinder (1990) pointed out, people usually employ simple intuitive shortcuts when faced with a judgment or a choice. A lack of familiarity with an issue increases the likelihood that one will base their judgment on a more intuitive shortcut, such as that of the

economic conditions. Given the frequent exposure of economic issues in the media, it is likely to uphold as a frequent cognitive pathway.

A larger proportion of Study 1 respondents did not claim the issue to be of importance, nor did they perceive themselves as being familiar with the oil exploration. It is possible that general attitudes towards the oil exploration are not very well formulated, thereby providing a reasonable chance that individuals were influenced by media exposure to economic issues. This consideration was tested in the form of two questions in Study 2: First, can increased accessibility of economic information, following exposure to economic news, affect opinions on issues such as the oil exploration? Second, does difference in valence and timeframe perspectives of such economic news direct opinions on the oil exploration in opposite directions?

4. Study 2

Study 2 explored how framing information about the economy, in terms of both valence and immediacy, could alter public approval of the oil exploration at the Dreki-Area. Previous research on framing (e.g. Nelson et al., 1997; Nelson & Oxley, 1999; Petty & Cacioppo, 1986) has laid a strong theoretical basis for the effectiveness of framing by persuasion. Those who are exposed to news frames containing economic information with a positive valence can therefore be expected to significantly perceive the economic conditions as more positive, compared with those exposed to a negative valence frame. Furthermore, according to temporal construal theory (Trope & Liberman, 2003), exposure to frames with a future time frame can be expected to exaggerate the difference anticipated by the valence compared with frames in a present time frame. There is also evidence that peoples' decision-making is much more influenced by perceived future economic conditions, rather than past or current ones (MacKuen et al., 1992)

Based on priming research (e.g. Iyengar & Kinder, 1987; Scheufele & Tewksbury, 2007), it was anticipated that exposure to economic news frames would temporarily increase accessibility of participants' perception of the economic conditions at the time of questioning. Priming the perception of economic conditions, which was altered by the economic news frames, was expected to influence participants' approval of the oil exploration, particularly due to response polarization (see Maio & Haddock, 2015). Based on the findings of Smith and Garcia (1995), and Bolsen and Cook (2008), and on the negative relationship observed in Study 1 between oil exploration approval and the perception of the economic conditions among those reporting low familiarity, *it was hypothesized that those exposed to a news frame containing economic information with a negative valence would be significantly more approving of the oil exploration than those exposed to a frame containing economic information with a positive valence, when adjusted for familiarity (H1a)*. Furthermore, based on the notion that the future time frame will exaggerate the difference anticipated by the valence on the perception of the economic conditions, *it was hypothesized that the future time frames would exaggerate the anticipated effects of the valence on the oil exploration approval (H1b)*.

4.1 Method

4.1.1 Participants. A total of 834 people (396 women and 438 men) participated in Study 2, ranging in age from 19 years to 85 years ($M = 50.7$ years, $SD = 15.5$ years). Different participant groups from those in Study 1 were recruited for Study 2, but with the same procedure and at the same time as Study 1. Of the 776 participants enlisting their highest level of education, 53.4% had finished a university degree, 13.7% had finished a theoretical college degree, 21.6% had finished a technical college degree and 11.3% had finished elementary school. Of the 672 participants who reported their monthly household income, 11.3% had a monthly income below 300,000 ISK, 23.1% between 301,000 and 500,000 ISK, 18.6% of participants between 501,000 and 700,000 ISK, 15.5% between 701,000 ISK and 900,000 ISK and 31.5% above 900,000 ISK. Of the 648 stating their political preference, 33.0% claimed to support either of the two parties in government, while 67.0% claimed to support parties not in government.

4.1.2 Materials and Research Design. To test the possible influence of economic matters as an attitude element for approval of the oil exploration, four different frames of text containing analysis of socioeconomic information were composed and provided (See Appendix B). All four frames contained the latest information (the first six months of 2015) on changes in socioeconomic variables, including GDP, unemployment, and inflation. Each frame included a specific interpretation of what these changes meant for the economic outlook. In order to make the frames more realistic, and also to best mimic the frequent circumstances in which people are exposed to and influenced by economic information, the frames were designed as news report in which a specialist (made up by the researchers) from the University of Iceland gave his thoughts on the latest socioeconomic situation in Iceland.

The opinions of the made-up specialist differed between the frames in *valence* (positive or negative) and *time frame* (current or in a few years). In the first frame, the economic changes were put in a positive and present time frame perspective in which the specialist gave numerous reasons as to why the changes to the economic indicators revealed that the present condition of the economy was good. In a similar way, in the second frame, the economic changes were put in a positive light, but in a future time frame, with the specialist claiming that the indicators gave reasons to believe that the economic conditions would be good in a few years' time. The third and fourth frames were also constructed from a present and future time frame perspective respectively, but with the economic conditions presented in a negative valence, in contrast to the first two. An economist was consulted in the making of the frames, in order to secure that any claims and assumptions attributed to the specialist in

the texts were valid from a theoretical perspective. In sum, the study employed a 2x2 experimental design with valence (positive or negative) and time frame (current or in a few years) used to influence oil exploration approval.

The same survey questionnaire was used as in Study 1.

4.1.3 Procedure. An email from the SRI, requesting participation in the survey, was sent to a total of 1,460 individuals (at the same time as Study 1), and 834 (57%) of those initially contacted participated in the survey. The email, its information, instructions and allowed response time, were the same as in Study 1.

Before being prompted to answer the survey questionnaire, participants were randomly assigned and exposed to one of the four framing conditions. Before participants read their respective frame, they read a passage claiming that reading the following news report was intended to test public reading comprehension of economic news and information. After reading the text, participants answered a few questions on the news report, as well as a question designed to test whether participants had read and understood the information appearing in their respective frame as intended. Subsequently, participants were prompted to answer the same survey as participants in Study 1. After finishing the survey, participants were prompted with a passage stating that the economic information they read at the start of the survey was opinion based and did not necessarily reflect real economic conditions.

Determining which participants qualified to be used in the statistical calculations proved challenging. Since the experiment was done online, the researchers could not monitor respondents while they read and answered the questions. Furthermore, the answering platform did not include a possibility of a time control, meaning that participants could start the survey, then possibly take a break and finish at much later time or date. In order to confidently observe the possible priming effects of the news frames, the survey questionnaire has to have been answered immediately after reading through the news frames. Since the survey was open to answering and submission for roughly a month, participants could potentially start and complete it at any time during that month. Answering time, measured in seconds, was thus very skewed at the Data. While it's impossible to accurately state the time it required to complete the survey in one setting, given the length and content of the communicating frames and the length of the questionnaire, it was estimated that the chances of someone taking longer than 45 minutes to finish the survey would be very slim. Furthermore, it was estimated to be highly unlikely that someone would sit for longer than 45 minutes on the survey without taking a break. Using 45 minutes as a cut point, the mean and standard deviation of the remaining time was calculated to be $m = 932 \text{ seconds}$ and $s = 421 \text{ seconds}$. Two standard

deviations up from the mean give the value of *1.774 seconds* or an upper bound of approximately 30 minutes. Subsequently, all participants taking more than *1.774 seconds* in submitting their answers were excluded, reducing the number of participants down to 608 (by 226, or 27%). It is possible that the effects of the priming wore off some participants even though they had finished the survey within the time limits, thus weakening the overall observed priming effects.

Participants who failed to answer a question testing whether they comprehended the specific economic outlook proposed in the communicating frames were also excluded from the data. This proved to intensely reduce the number of participants down to 351 from 608.

Due to potential complications in reliability of factorial ANOVA tests with unbalanced data (e.g. Landsheer & van den Wittenboer, 2015), the number of participants in three groups was randomly reduced down to the same number of participants as the fourth group, which contained the fewest participants.

4.2 Results

To test whether the communicating frames altered public perception of the economic conditions, a factorial ANOVA was conducted adjusting for gender, age, party support, education, and household income. Household income was used instead of the financial situation satisfaction used in Study 1, as the economic news frames may have affected their level of satisfaction. The news frames' *valence* had a significant effect on the perception of the economic conditions after controlling for gender, age, party support, education and household income, $F = 20.27 (1, 181), p < .001$. Those exposed to frames with positive valence significantly perceived the economic conditions to be better ($M = 3.39, SD = .88$), compared with those exposed to frames with negative valence ($M = 2.74, SD .97$). The *time frame* did not significantly affect the perception of the economic condition, but a significant interaction effect emerged between valence and time frame, $F = 5.37 (1, 181), p < .05$ (See Figure 2 for a plot of the estimated means). Those exposed to the frame with positive valence in a present time frame ($M = 3.61, SD = .81$) perceived the economic conditions to be significantly better than those exposed to the frame with negative valence in a present time frame ($M = 2.59, SD = .95$), as well as those not exposed to a framing condition ($M = 2.94, SE = 1.01$). Those exposed to the frame with positive valence in a future perspective ($M = 3.15, SD = .89$) perceived the economic conditions to be significantly better than those not exposed to a framing condition. In other words, valence of the economic message mattered more in the present timeframe compared with the future timeframe.

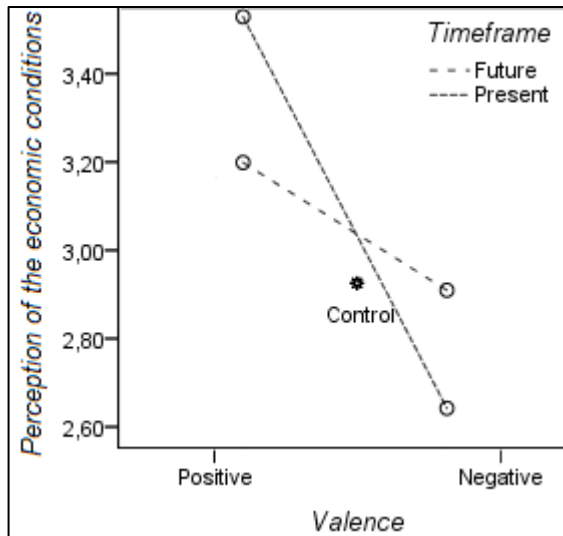


Figure 2. Profile plot of the interaction effects between valence and time frame on the perception of the economic conditions. The Control is the perception of the economic conditions of Study 1 participants', which were not exposed with any framing conditions.

Next, a factorial ANOVA was conducted to test the first hypothesis, *that people exposed to news frames containing economic information with a negative valence would be more approving of the oil exploration compared with people exposed to positive valence news frames (H1a), and that the future time frames would exaggerate the effects anticipated by the valence on the oil exploration approval (H1b)*. The model was adjusted for gender, age, party support, education, and familiarity with the possible impacts of the oil extraction. Household income was adjusted for in test runs, but as it did not turn out to be a significant indicator of approval it was omitted from final calculations in order to increase the model power. There was a significant effect of valence of the economic frames, $F = 4.65 (1, 209), p < .05$ on oil exploration approval. The mean approval for the group of people exposed to frames with negative valence economic information was $M = 3.10 (SD = 1.37)$, but for those exposed to positive valence frames the mean was $M = 2.66 (SD = 1.44)$. Neither timeframe nor interaction between valence and timeframe significantly affected oil exploration approval. As in Study 1, familiarity was negatively correlated with oil exploration approval, $F = 5.41 (1, 209), p < .05$. Omitting familiarity as a covariate from the model did not affect the significance level of valence, $p < .05$.

4.3 Discussion

The news frames had a decisive impact on participants' perception of the economic conditions, which is in line with previous research on framing and priming (Nelson & Oxley, 1999; Petty & Cacioppo, 1986). As was expected, those who were exposed to positive

valence frames perceived the economic conditions to be better than those exposed to negative valence frames. The time frame also interacted with the valence, but not in the expected manner, as future time frame conditions reduced the valence effects. According to temporal construal theory (Trope & Liberman, 2003), people think about events more strongly the more distant they are in time, so influencing participants to consider the economic conditions in a future time frame would at first glance be expected to aggregate the valence effects. The temporal construal theory is based on the idea that people use different cognitive processes dependent on the time frame perspective. While the news frames did present the economic information in different time frames, it also encouraged participants to perceive the likely effects (in short-term or long-term, depending on the time frame condition) of the latest socioeconomic quarterlies on the economic conditions in a specific way. By doing so, the frames may influence the cognitive pathways in which participants observe the economic conditions, possibly diminishing the naturally occurring processes on which the temporal construal is based.

A potential explanation for why the future time frame appears to have reduced the valence effect on the perception of economic conditions is how the news frames may have interacted with the wording of the item used for the measurement, where participants were asked how good or bad they considered the economic conditions in Iceland to be. While the question did not limit participants to any specific time frame, it is fair to suggest that some will have given their answer based on their perception of the moment. Those exposed to news frames in a positive valence in future time frames may therefore have perceived the economic conditions to be worse at the moment relative to the future projection (and those exposed to negative valence news frames conceived the economic conditions to be relatively better compared to the future projection), while those receiving present time frames were less likely to have thought about the economic conditions in such relative terms.

The news frames exposure had a significant impact on oil exploration approval, with those exposed to negative valence news frames more approving of the oil exploration than those exposed to positive valence frames ($p < .05$). Neither time frame nor an interaction between valence and time frame significantly affected the oil exploration approval. Since the time frame reduced the valence effects on the perception of the economic conditions, the insignificant interaction effect between valence and time frame on oil exploration approval does not come as a surprise.

A strength of this study design was that it allowed for a national representation of results, so the impacts of the news framing upon the perception of the economic conditions

can be thought to be fairly representative, revealing common cognitive trends among the public. This is not the common approach in framing research, where samples are usually more homogeneous and less representative of the general population, in order to decrease randomness at the Data and thereby increase the probabilities of observing correlations. This study included a check-up question testing whether participants comprehended the specific economic outlook proposed in the news frames, which proved vital: 44% of the participants failed to answer the question correctly.

As this experiment was done online, participants were not in a controlled environment and were able to finish the survey at a much later time or date from when they started. This makes it difficult to accurately determine which participants had been under the priming influence when answering the survey questionnaire. A time limit of 30 minutes for answering the questionnaire, due to the fact that priming effects decreased over time, was determined by exploring the data and taking into account the length of the questionnaire and the sufficient time expected for respondents to read and comprehend the frames. Unfortunately, this is based more on intuition than on strong scientific grounds, as the literature does not seem to offer any specific guidance on this matter. Still, tests in which the time limit was altered, decreased by 5-10 minutes or even doubled to 60 minutes, did not notably affect the results. Undoubtedly some portion of the participant sample used in the calculations may not have been under the priming influence when answering the survey questionnaire. The effects of the priming may therefore be underrepresented in the results.

The results support what has been observed previously: that economic news can influence public perception of the economy, and furthermore, that the time frame in which economic information is put into context also effects the perception (see e.g. Goidel & Langley, 1995; Hester & Gibson, 2003). The results moreover demonstrate the lesser known notion that exposure to economic news can influence attitudes towards environmentally and economically related issues, as it did in this case towards oil exploration at the Dreki-Area. This kind of influence can emerge even if the economic information is presented without any mention of the issues it may affect.

With this relationship now brought to attention, further studies on it may deepen the understanding of its underlying processes. Benefits may arise from exploring how the exposure to economic information interacts with familiarity and attitude strength towards the issues examined. Further benefits may arise from investigating how exposure may affect subjective importance of economic matters as attitude elements, compared with other attitude

elements, such as environmental considerations for economically and environmentally related issues.

5. Summary and Concluding Discussion

This research examined the relationship between public perception of economic conditions and attitudes towards environmental issues (Study 1), and how exposure to economic information (e.g. by the media) may influence public perception of economic conditions, and subsequently attitudes towards environmental issues (Study 2). The research employed the oil exploration in the North Sea Dreki-Area as a case study, and also examined general attitudes in Iceland towards the exploration.

A little less than half of the Icelandic public strongly or somewhat favored the oil exploration. Socio-demographic and ideological variables, that have previously been shown to influence public attitudes towards oil-drilling (Bolsen & Cook, 2008; Smith & Garcia, 1995), and other issues related to the environment (e.g., Dietz et al., 2002; Mohai, 1992), also proved to be significant indicators of the approval of the oil exploration. In this study approval of oil exploration correlated with increasing age, gender (males were significantly more in favor of the exploration than females), and government party affiliation (right-wing, conservatives were more in favor than those supporting parties on the left).

Based on a comparison between this study's results, which showed 47% support for the exploration, and a survey conducted three years ago (Valþórsson, 2013) in which support was measured at 80%, approval for the oil exploration seems to be decreasing in Iceland. Furthermore, increased familiarity with the oil exploration is significantly associated with decreased approval. Therefore, the decrease in approval can be explained, at least in part, by the fact that familiarity with the exploration may have increased between the present study and the 2013 survey. The economic improvements in Iceland throughout this time could have also been an influence (Statistics Iceland, 2015), as the public's concern for the environment and environmentally responsible behavior increases during times of economic prosperity (Dunlap & Scarce, 1991; Elliott et al., 1995; Guber, 2003).

Despite the simultaneous decrease in oil exploration support and increase in improved economic conditions in Iceland, the perception of economic conditions did not prove to be a directly significant indicator for approval of oil exploration, as was hypothesized. This is most plausibly due to the relative importance of attitude elements, as half of Study 1 participants reported environmental factors to be the most important (attitude elements) in the overall evaluation of possible extraction at the Dreki-Area. With environmental factors outplaying the importance of economic factors, variability in economic perception is unlikely to have a big

impact on approval for the oil exploration, as approval is first and foremost based on environmental factors.

Interestingly, the perception of economic conditions was a significant indicator of exploration approval among those with a low self-reported familiarity with the issue, in which case negative perceptions of the economic conditions was associated with increased approval of the oil exploration. People less familiar with the exploration are more likely to have less constructed ideas about them and their potential impacts and complications. As people usually employ simple intuitive shortcuts in judgment and decision-making (Krosnick & Kinder, 1990), those who are not familiar with a topic may be more likely to base their judgments on seemingly easier and/or more familiar factors. This may frequently result in people basing their opinion on economic factors, as economic issues are generally viewed among the most important issues by the public (Jennings & Wlezien, 2011; Jones & Baumgartner, 2004), and are heavily monitored and covered by the media (Goidel & Langley, 1995; Hester & Gibson, 2003). The results indicated that people less familiar with the exploration, when perceiving the economy in a negative state, are more inclined to approve of the oil exploration. These results sync with the idea that during times of economic hardship the public prioritizes solving the economic difficulties above environmental concerns (Dunlap & Scarce, 1991; Elliott et al., 1995).

The experiments carried out in Study 2 were meant to test the causal relationship explored in Study 1, between the perception of economic conditions and attitudes towards the oil exploration. These experiments helped to further realize the possible effects of economic media coverage on attitudes towards the oil exploration. As has been shown elsewhere (e.g. Nelson et al., 1997; Nelson & Oxley, 1999; Petty & Cacioppo, 1986), the persuasion framing had significant impacts on Study 2 participants. Framing participants with different economic news affected their perception of the economic conditions: those who received positive economic news frames exhibited a significantly more positive perception of the economic conditions. Interestingly, the immediacy of the news frames also interacted with the valence as future time frame conditions reduced the valence effects. Drawing from temporal construal theory (Trope & Liberman, 2003), the timeframe conditions would have been expected to increase rather than reduce the valence effect. The converse results of this study could be a result of how the economic information presented in the news frames may have interacted with the wording of the item used for the measurement of the perception of the economic conditions.

As hypothesized, the valence of the economic frames affected the approval of the oil exploration: participants who received news frames with a negative valence were significantly more approving of the oil exploration than those who received news frames with a positive valence. This confirms the idea that ‘incidental framing’ has a role in attitude formation, namely that issues heavily reported by the media can become elements in attitude formation on other issues reported at the same time without the media necessarily presenting the connection. Furthermore, this also suggests that valence of attitude elements used in framing research is an important part to consider when investigating attitude opinion. Previous research has documented different opinions towards environmental issues when the issues were framed with positive economic frames and negative environmental frames (Shen, 2004; Nelson & Oxley, 1999). It is possible that similar results could’ve been obtained by separately employing either economic or environmental frames, that differed in valence.

The apparent effects of the economic news frames on oil exploration approval are even more interesting given the results from Study 1. While results from Study 1 did not show a significant connection between oil exploration approval and participants’ perception of the economic conditions overall, the economic news frames still altered both the perception of economic conditions and approval of the oil exploration. This most likely means that the attitude strength towards the issue is not very high, and that the public is generally ambivalent towards the issue, considering it to have both positive and negative elements. The attitudes are therefore vulnerable to response polarization, in which the attitudes become more favorable when positive elements are highlighted or salient than when negative elements are salient (Bell & Esses, 2002). Priming a certain economic reality with the news frames appears to have both altered the participants’ perception of the economic conditions, and made this perception salient in participants’ memory during the survey response. This is in accordance with the effects of framing by persuasion (Nelson & Oxley; Petty & Cacioppo, 1986), but it also importantly suggests that framing effects can transpire merely through increased element accessibility in thought, or priming (Iyengar & Kinder, 1987; Krosnick & Kinder, 1990, Scheufele, 2000).

The study’s main strength lies in the fact that participants were randomly assigned from Iceland’s national registry. Despite this strength there were also a handful of complications within the study, such as low response rates to certain survey items. Establishing an appropriate time limit for participants to complete the survey in Study 2 also provided some complications. Strict time limit, a comprehension check-up question, and randomly reducing the number of participants in each of the groups down to the number of

the smallest group to increase the validity of the factorial ANOVA tests meant that the number of participants and thus power in the eventual calculations was lower than initially hoped for.

The results of this study can add to the understanding of the relationship between public perception of economic conditions, the objective economic conditions, and public attitudes on environmental issues. The two environmental and economically related issues tested seemed to correlate in different ways to the perception of economic conditions, with the approval of aluminum production in Iceland positively correlated with the perception of the economic conditions. This suggests that people think differently about such industries depending on whether or not they are currently operating. With a more positive view on the economic conditions, people may feel satisfied with the operations already in place, decreasing interest in new industrial operations. Conversely, if people perceive the economic conditions to be poor, it may result in dissatisfaction towards current industries and an increased desire for something different.

More interestingly though are the apparent effects of economic media coverage on the oil exploration, which could very well apply to environmentally related issues in general. The perception of economic conditions was not directly correlated with oil exploration approval except when participants considered themselves unfamiliar with the oil exploration. Furthermore, half of the participants in Study 1 claimed that environmental factors held the most weight when considering the feasibility of an oil extraction at the Dreki-Area. Still, by exposing Study 2 participants to news frames that differed in valence, approval for the exploration significantly differed between the groups. Although participants who are unfamiliar, whose attitudes are fragile and weakly constructed, are presumably more sensitive to attitude alterations by economic framing than those who are more familiar, the results of this study showed that general attitudes towards the oil exploration can be altered with economic framing, even with only one exposure.

The apparent impact of economic framing brings to attention the power of the media in indirectly influencing environmental attitudes. By reporting on economic matters, the media can shape its audience perception of economic conditions and make this perception salient in the memory of the same audience, e.g. while continuing to browse the media for information on other things, such as environmental issues. As the media tends to follow and report more closely on economic matters during times of economic difficulties rather than during prosperous times (Hester & Gibson, 2003), it seems that negative perception of economic conditions will have a better chance of remaining salient in memory during the

formation of opinions, such as on environmental issues. In other words, environmental attitudes/behaviors are more likely to change as a result of the economy during economic downturns rather than during times of economic prosperity. Additionally, decreased exposure to negative economic media coverage and thus decreased salience should have positive effects on environmental attitudes. This may shed further light on the processes that lay behind the post-materialistic value shift defined by Inglehart (1994). If times of economic growth prompt the media to report not only positively, but also less frequently on economic matters, the importance of economic factors and thus their weight as attitude elements in public evaluation decreases. This, in turn, may lead to values, such as environmental ones, to subjectively become more important as attitude elements.

Further investigations of the relationship between the perception of economic conditions, the objective economic state, and public attitudes towards environmentally related issues may benefit research on environmental behavior. While this study focuses on measuring the impact of perception of the economy (attitude valence on the economy), the importance/weight of economic factors as attitude elements could play just as significant a role in attitude formation on environmental issues as perception does. Further research with greater attention paid to the importance of economic factors as attitude elements would provide a better understanding, especially because the importance levels seem to differ between times of different economic periods, which can distort observed effects of the perception of the economic conditions. Of particular interest is how the importance of economic factors as attitude elements interacts with the overall attitude strength of specific environmental issues, and the role of attitudinal ambivalence in this interaction.

While further research needs to be done on the subject, some important thoughts on public environmental behavior can be drawn from this research: If exposure to negative economic news influences people to become less considerate of the environment and environmental values, the simple decrease in frequency of such exposure can lead to a positive shift in public attitudes towards issues with great environmental implications. Related to this, and to be noted from this research, is the observation that with increasing familiarity of issues, and therefore attitude strength towards the issues, the economic conditions would play a less significant role in the attitude formation subject to them. Increasing familiarity of environmental issues and their nature among the public can subsequently decrease the role of the economy in their attitude formation.

References

- Andrade, E. B., & Ariely, D. (2009). The enduring impact of transient emotions on decision making. *Organizational Behavior and Human Decision Processes*, 109(1), 1-8.
- Bell, D. W., & Esses, V. M. (2002). Ambivalence and Response Amplification: A Motivational Perspective. *Personality and Social Psychology Bulletin*, 28(8), 1143-1152. doi: 10.1177/01461672022811012
- Bishop, B. H. (2014). Focusing events and public opinion: evidence from the deepwater horizon disaster. *Political Behavior*, 36(1), 1-22. doi: 10.1007/s11109-013-9223-7
- Blomberg, H., & Kroll, C. (1999). Do Structural Contexts Matter? Macro-sociological Factors and Popular Attitudes towards Public Welfare Services. *Acta Sociologica*, 42(4), 319-335. doi: 10.1177/000169939904200403
- Bolsen, T., & Cook, F. L. (2008). The polls—Trends public opinion on energy policy: 1974–2006. *Public Opinion Quarterly*, 72(2), 364-388. doi: 10.1093/poq/nfn019
- Breckler, S. J. (1984). Empirical validation of affect, behavior, and cognition as distinct components of attitude. *Journal of personality and social psychology*, 47(6), 1191.
- Brehm, J. W., & Cohen, A. R. (1962). *Explorations in cognitive dissonance*. Hoboken, NJ, US: John Wiley & Sons Inc.
- Brulle, R. J., Carmichael, J., & Jenkins, J. C. (2012). Shifting public opinion on climate change: an empirical assessment of factors influencing concern over climate change in the US, 2002–2010. *Climatic change*, 114(2), 169-188. doi: 10.1007/s10584-012-0403-y
- Cacioppo, J. T., Gardner, W. L., & Berntson, G. G. (1997). Beyond Bipolar Conceptualizations and Measures: The Case of Attitudes and EvaluativeSpace. *Personality and Social Psychology Review*, 1(1), 3-25. doi: 10.1207/s15327957pspr0101_2
- Canada, C. E., & Division, C. G. G. (2004). *Primary Aluminium Production [electronic Resource] : a Guidance Manual for Estimating Greenhouse Gas Emissions from Fuel Combustion and Process-related Sources*: Environment Canada.
- Chaiken, S. (1987). The Heuristic Model of Persuasion. In M. P. O. J. M. H. Zanna, C. P.; (Ed.), *Social Influence: The Ontario Symposium* (Vol. 5, pp. 3-39). Hillsdale, NJ: Erlbaum.
- Chong, D., & Druckman, J. N. (2007). Framing theory. *Annu. Rev. Polit. Sci.*, 10, 103-126. doi: 10.1146/annurev.polisci.10.072805.103054
- De Boef, S., & Kellstedt, P. M. (2004). The Political (And Economic) Origins of Consumer Confidence. *American Journal of Political Science*, 48(4), 633-649. doi: 10.2307/1519924
- Dietz, T., Kalof, L., & Stern, P. C. (2002). Gender, Values, and Environmentalism. *Social Science Quarterly (Wiley-Blackwell)*, 83(1), 353-364. doi: 10.1111/1540-6237.00088
- Dunlap, R. E., & Scarce, R. (1991). Poll trends: Environmental problems and protection. *The public opinion quarterly*, 55(4), 651-672. doi: 10.1086/269288
- Eagly, A. H., & Chaiken, S. (1993). *The Psychology of Attitudes*. Fort Worth, TX: Harcourt Brace Jovanovich.
- Elliott, E., Regens, J. L., & Seldon, B. J. (1995). Exploring Variation in Public Support for Environmental Protection. *Social Science Quarterly*, 76(1), 41-52.
- Entman, R. M. (1993). Framing: Toward Clarification of a Fractured Paradigm. *Journal of communication*, 43(4), 51-58. doi: 10.1111/j.1460-2466.1993.tb01304.x
- Erikson, R. S., MacKuen, M. B., & Stimson, J. A. (2002). *The macro polity*: Cambridge University Press.

- Fazio, R. H. (1995). Attitudes as object-evaluation associations: Determinants, consequences, and correlates of attitude accessibility. In R. E. K. Petty, Jon A (Ed.), *Attitude strength: Antecedents and consequences* (Vol. 4, pp. 247-282). Hillsdale, NJ: Erlbaum.
- Festinger, L. (1962). *A theory of cognitive dissonance*. Stanford, CA, US: Stanford University Press.
- Gamson, W. A., & Modigliani, A. (1989). Media discourse and public opinion on nuclear power: A constructionist approach. *American journal of sociology*, 1-37. doi: 10.1086/229213
- Gamson, W. A., & Modigliani, A. (1994). The changing culture of affirmative action. In P. Burstein (Ed.), *Equal employment opportunity: labor market discrimination and public policy*. New York, NY, US: Aldine De Gruyter.
- Goidel, R. K., & Langley, R. E. (1995). Media Coverage of the Economy and Aggregate Economic Evaluations: Uncovering Evidence of Indirect Media Effects. *Political Research Quarterly*, 48(2), 313-328. doi: 10.2307/449071
- Greenberg, M. (2009). Energy sources, public policy, and public preferences: analysis of US national and site-specific data. *Energy Policy*, 37(8), 3242-3249. doi: 10.1016/j.enpol.2009.04.020
- Guber, D. L. (2003). *The grassroots of a green revolution : polling America on the environment*. Cambridge, MA, US: MIT Press.
- Headrick, B., & Lanoue, D. J. (1991). Attention, asymmetry, and government popularity in Britain. *The Western Political Quarterly*, 67-86. doi: 10.2307/448747
- Hester, J. B., & Gibson, R. (2003). The economy and second-level agenda setting: A time-series analysis of economic news and public opinion about the economy. *Journalism & Mass Communication Quarterly*, 80(1), 73-90. doi: 10.1177/107769900308000106
- Inglehart, R. (1995). Public Support for Environmental Protection: Objective Problems and Subjective Values in 43 Societies. *PS: Political Science and Politics*, 28(1), 57-72. doi: 10.2307/420583
- Inglehart, R., & Abramson, P. R. (1994). Economic Security and Value Change. *The American Political Science Review*, 88(2), 336-354. doi: 10.2307/2944708
- Iyengar, S., & Kinder, D. R. (1987). *News that Matters: Agenda-Setting and Priming in a Television Age*. Chicago, IL, US: University of Chicago Press.
- Jennings, W., & Wlezien, C. (2011). Distinguishing Between Most Important Problems and Issues? *Public Opinion Quarterly*, 75(3), 545-555. doi: 10.1093/poq/nfr025
- Jones, B. D., & Baumgartner, F. R. (2004). Representation and agenda setting. *Policy Studies Journal*, 32(1), 1-24. doi: 10.1111/j.0190-292X.2004.00050.x
- Kehrberg, J. E. (2007). Public opinion on immigration in Western Europe: Economics, tolerance, and exposure. *Comparative European Politics*, 5(3), 264-281. doi: 10.1057/palgrave.cep.6110099
- Kolbeinsson, J. B. (2015). Mistök að styðja olíuleit á Drekasvæði. *ruv.is*. Retrieved from <http://www.ruv.is/frett/mistok-ad-stydja-oliuleit-a-drekasvaedi>
- Krosnick, J. A., & Kinder, D. R. (1990). Altering the foundations of support for the president through priming. *American Political Science Review*, 84(02), 497-512. doi: 10.2307/1963531
- Kunda, Z. (1990). The case for motivated reasoning. *Psychological bulletin*, 108(3), 480. doi: 10.1037//0033-2909.108.3.480
- Landsheer, J. A., & van den Wittenboer, G. (2015). Unbalanced 2 x 2 factorial designs and the interaction effect: a troublesome combination. *PloS one*, 10(3), e0121412. doi: 10.1371/journal.pone.0121412

- Lerner, J. S., Small, D. A., & Loewenstein, G. (2004). Heart strings and purse strings - Carryover effects of emotions on economic decisions. *Psychological Science*, *15*(5), 337-341. doi: 10.1111/j.0956-7976.2004.00679.x
- Lewis-Beck, M. S. (1986). Comparative Economic Voting: Britain, France, Germany, Italy. *American Journal of Political Science*, *30*(2), 315-346. doi: 10.2307/2111099
- Lilley, J., & Firestone, J. (2013). The effect of the 2010 Gulf oil spill on public attitudes toward offshore oil drilling and wind development. *Energy Policy*, *62*, 90-98. doi: 10.1016/j.enpol.2013.07.139
- MacKuen, M. B., Erikson, R. S., & Stimson, J. A. (1992). Peasants or bankers? The American electorate and the US economy. *American Political Science Review*, *86*(03), 597-611. doi: 10.2307/1964124
- Magnason, A. S. (2006). *Draumalandið - Sjálfshjálparbók handa hræddri þjóð*. Reykjavik: Mál og Menning.
- Maio, G., & Haddock, G. (2015). *The Psychology of Attitudes and Attitude Change* (2 ed.). London: Sage.
- McCombs, M. E., & Shaw, D. L. (1972). The agenda-setting function of mass media. *Public Opinion Quarterly*, *36*(2), 176-187.
- Mohai, P. (1992). Men, women, and the environment: An examination of the gender gap in environmental concern and activism. *Society & Natural Resources*, *5*(1), 1-19. doi: 10.1080/08941929209380772
- Mutz, D. C. (1992). Mass Media and the Depoliticization of Personal Experience. *American Journal of Political Science*, *36*(2), 483-508. doi: 10.2307/2111487
- NEA. (2007). Olíuleit á Drekasvæði við Jan Mayen-hrygg. from http://orkustofnun.is/media/utbod2009/Umhverfisskyrsla_2007.pdf
- Nelson, T. E., Clawson, R. A., & Oxley, Z. M. (1997). Media framing of a civil liberties conflict and its effect on tolerance. *American Political Science Review*, *91*(3), 567-583. doi: Doi 10.2307/2952075
- Nelson, T. E., & Oxley, Z. M. (1999). Issue framing effects on belief importance and opinion. *Journal of Politics*, *61*(4), 1040-1067. doi: Doi 10.2307/2647553
- Petty, R. E., & Cacioppo, J. T. (1981). *Attitudes and Persuasion: Classic and Contemporary Approaches*. Dubuque, IA: Brown.
- Petty, R. E., & Cacioppo, J. T. (Eds.). (1986). *The Elaboration Likelihood Model of Persuasion* (Vol. 19). New York: Academic Press.
- Petty, R. E., & Krosnick, J. A. (Eds.). (1995). *Attitude Strength: Antecedents and Consequences*. Hillsdale, NJ: Erlbaum.
- Rosenberg, D. M., Berkes, F., Bodaly, R. A., Hecky, R. E., Kelly, C. A., & Rudd, J. W. (1997). Large-scale impacts of hydroelectric development. *Environmental Reviews*, *5*(1), 27-54. doi: 10.1139/a97-001
- Scheufele, D. A. (1999). Framing as a theory of media effects. *Journal of communication*, *49*(1), 103-122. doi: 10.1111/j.1460-2466.1999.tb02784.x
- Scheufele, D. A. (2000). Agenda-setting, priming, and framing revisited: Another look at cognitive effects of political communication. *Mass Communication & Society*, *3*(2-3), 297-316. doi: 10.1207/S15327825MCS0323_07
- Scheufele, D. A., & Tewksbury, D. (2007). Framing, agenda setting, and priming: The evolution of three media effects models. *Journal of communication*, *57*(1), 9-20. doi: 10.1111/j.1460-2466.2006.00326.x
- Scruggs, L., & Benegal, S. (2012). Declining public concern about climate change: Can we blame the great recession? *Global Environmental Change*, *22*(2), 505-515. doi: 10.1016/j.gloenvcha.2012.01.002

- Shen, F. Y. (2004). Effects of news frames and Schemas on individuals' issue interpretations and attitudes. *Journalism & Mass Communication Quarterly*, 81(2), 400-416. doi: 10.1177/107769900408100211
- Shum, R. Y. (2012). Effects of economic recession and local weather on climate change attitudes. *Climate Policy*, 12(1), 38-49. doi: 10.1080/14693062.2011.579316
- Singer, M. M. (2010). Who Says "It's the Economy"? Cross-National and Cross-Individual Variation in the Saliency of Economic Performance. *Comparative Political Studies*, 44(3), 284-312. doi: 10.1177/0010414010384371
- Smith, M. B., Bruner, J. S., & White, R. W. (1956). *Opinions and Personality*. New York: Wiley.
- Stanig, P. (2013). Political polarization in retrospective economic evaluations during recessions and recoveries. *Electoral Studies*, 32(4), 729-745. doi: 10.1016/j.electstud.2013.05.029
- Statistics Iceland. (2015). Statistical Yearbook of Iceland 2015. In S. Guðjónsdóttir (Ed.), *Statistical Yearbook of Iceland 2015* (Vol. 25). Reykjavík: Statistics Iceland.
- Sverrisdóttir, V. (2005). Þjóðhagslegur ávinningur stóriðju. *Morgunblaðið*. Retrieved from <http://www.mbl.is/greinasafn/grein/1036231/>
- Teel, T. L., Bright, A. D., Manfredi, M. J., & Brooks, J. J. (2006). Evidence of biased processing of natural resource-related information: A study of attitudes toward drilling for oil in the arctic national wildlife refuge. *Society & Natural Resources*, 19(5), 447-463. doi: 10.1080/08941920600561140
- Trope, Y., & Liberman, N. (2003). Temporal construal. *Psychol Rev*, 110(3), 403-421. doi: 10.1037/0033-295X.110.3.403
- Tversky, A., & Kahneman, D. (1981). The Framing of Decisions and the Psychology of Choice. *Science*, 211(4481), 453-458. doi: 10.1126/science.7455683
- Valþórsson, G. E. (2013). Mikill meirihluti þjóðarinnar vill leyfa olíuvinnslu á Drekasvæðinu. *Visir.is*. Retrieved from <http://www.visir.is/mikill-meirihluti-thjodarinnar-vill-leyfa-oliuvinnslu-a-drekasvaedinu/article/2013130118864>

Appendix A

Survey Questionnaire

1. Ertu hlynnt/ur eða andvíg/ur því að leitað sé að olíu á Drekasvæðinu?

1. Mjög hlynnt/ur
2. Frekar hlynnt/ur
3. Hvorki hlynnt/ur né andvíg/ur
4. Frekar andvíg/ur
5. Mjög andvíg/ur

98. Veit ekki

99. Vil ekki svara

2. Hversu miklu eða litlu máli skiptir málefnið olíuvinnsla á Drekasvæðinu þig?

1. Mjög miklu máli
2. Frekar miklu máli
3. Hvorki miklu né litlu máli
4. Frekar litlu máli
5. Mjög litlu máli

98. Veit ekki

99. Vil ekki svara

3. Hversu vel eða illa telur þú þig þekkja til þeirra áhrifa/afleiðinga sem gætu orðið af olíuvinnslu á Drekasvæðinu ef af henni verður?

1. Þekki mjög vel til
2. Þekki frekar vel til
3. Þekki hvorki vel né illa til
4. Þekki frekar illa til
5. Þekki mjög illa til

98. Veit ekki

99. Vil ekki svara

4. Hversu miklu eða litlu máli skipta eftirfarandi þættir, hvort sem það er til góðs eða ills, þegar kemur að mati þínu á olíuvinnslu á Drekasvæðinu?

		Mjög miklu máli	Frekar miklu máli	Hvorki miklu né litlu máli	Frekar litlu máli	Mjög litlu máli	Veit ekki	Vil ekki svara
A.	Samfélagslegir þættir (t.a.m. atvinnusköpun og byggðasjónarmið)	1	2	3	4	5	98	99
B.	Umhverfisþættir (t.a.m. olíumengun og útblástur koltvívíoxíðs – CO ₂)	1	2	3	4	5	98	99
C.	Hagrænir þættir (t.a.m. hagvöxtur og ríkistekjur)	1	2	3	4	5	98	99

5. Hver þessara þátta finnst þér skipta mestu máli þegar kemur að olíuvinnslu á Drekasvæðinu?

Merktu við þann þátt sem þér finnst skipta mestu máli

- Samfélagslegir (t.a.m. atvinnusköpun og byggðasjónarmið)
- Umhverfis (t.a.m. olíumengun og útblástur koltvívíoxíðs – CO₂)
- Hagrænir (t.a.m. hagvöxtur og ríkistekjur)

98. Veit ekki

99. Vil ekki svara

6. Hversu gott eða slæmt telur þú ástand efnahagsmála á Íslandi vera?

- Mjög gott
- Frekar gott
- Hvorki gott né slæmt
- Frekar slæmt
- Mjög slæmt

98. Veit ekki

99. Vil ekki svara

7. Hversu ánægð/ur eða óánægð/ur ert þú með fjárhagsstöðu þíns heimilis?

(Translated from World Values Survey Wave 6 (2010-2014): How satisfied are you with the financial situation of your household?)

1. Mjög ánægð/ur
2. Frekar ánægð/ur
3. Hvorki ánægð/ur né óánægð/ur
4. Frekar óánægð/ur
5. Mjög óánægð/ur
98. Veit ekki
99. Vil ekki svara

8. Hversu hlynnt/yr eða andvíg/ur ertu eftirfarandi atriðum

		Mjög hlynnt/ur	Frekar hlynnt/ur	Hvorki hlynnt/ur né andvíg/ur	Frekar andvíg/ur	Mjög andvíg/ur	Veit ekki	Vil ekki svara
A.	Frekari virkjanaframkvæmdum í landinu	1	2	3	4	5	98	99
B.	Lagningu sæstrengs til að selja raforku til Evrópu	1	2	3	4	5	98	99
C.	Starfsemi álframleiðslufyrirtækja á Íslandi	1	2	3	4	5	98	99

9. Hversu sammála eða ósammála ertu eftirfarandi fullyrðingu

Fyrst og fremst skoðanir þeirra sem búa í nærumhverfi við fyrirhugaðar virkjana- og stóriðjuframkvæmdir ættu að skipta máli hvað varðar framkvæmdina ekki skoðanir allra landsmanna.

1. Mjög sammála
2. Frekar sammála
3. Hvorki sammála né ósammála

- 4. Frekar ósammála
- 5. Mjög ósammála

- 98. Veit ekki
- 99. Vil ekki svara

10. Þegar á heildina er litið, telur þú að Ísland hagnist á því að innflytjendur setjist að á Íslandi eða telur þú að Íslandi væri betur borgið án þeirra?

(Translated from the Eurobarometer survey 47.1 (1997): Generally speaking, do you think that (OUR COUNTRY) benefits from the presence of immigrants from non-European Union countries, or do you think that (OUR COUNTRY) would be better off without them? ((F BENEFITS / BETTER OFF) Would you say a great deal or a little?)

- 1. Hagnist mjög mikið
- 2. Hagnist frekar mikið
- 3. Hvorki hagnist né sé betur borgið án þeirra
- 4. Væri betur borgið án þeirra
- 5. Væri mun betur borgið án þeirra
- 98. Veit ekki
- 99. Vil ekki svara

11. Hér eru tvær fullyrðingar sem að fólk nefnir stundum þegar það ræðir um fátækt innanlands og utanlands. Hvor þeirra lýsir betur þínu viðhorfi?

- a. Okkur Ber skylda til að leggja fyrst áherslu á að hlúa að þeim sem eiga um sárt að binda hér á landi áður en að við hjálpum bágstöddu fólki í útlöndum
- b. Okkur ber jöfn skylda til að hjálpa bágstöddu fólki í útlöndum og þeim sem eiga um sárt að binda hér á landi.

- 98. Veit ekki
- 99. Vil ekki svara

12. Hér eru tvær fullyrðingar sem að fólk nefnir stundum þegar það ræðir um umhverfið og efnahagsmál. Hvor þeirra lýsir betur þínu viðhorfi?

(Translated from the World Values Survey Wave 6 (2010-2014): Here are two statements people sometimes make when discussing the environment and economic growth. Which of them comes closer to you own point of view?)

- a. Verndun umhverfisins ætti að vera forgangsríði, jafnvel þó að það hægi á hagvexti og kosti einhver störf.

b. Hagvöxtur og myndun nýrra starfa ætti að hafa forgang, jafnvel þó að það hafi að einhverju leyti slæmar afleiðingar á umhverfið.

a. *Protecting the environment should be given priority, even if it causes slower economic growth and some loss of jobs*

b. *Economic growth and creating jobs should be the top priority even if the environment suffers to some extent*

98. Veit ekki

99. Vil ekki svara

13. Hversu sammála eða ósammála ertu eftirfarandi fullyrðingum um umhverfismál

		Mjög sammál a	Frekar sammál a	Hvorki sammála né ósammál a	Frekar ósammála	Mjög ósammála	Veit ekki	Vil ekki svara
A.	Við höfum of miklar áhyggjur af framtíð umhverfisins en ekki nógu miklar áhyggjur af vöruverði og atvinnutækifærum í dag	1	2	3	4	5	98	99
B.	Fólk hefur of miklar áhyggjur af því að framþróun mannsins skaði umhverfið	1	2	3	4	5	98	99
C.	Vísindin munu leysa umhverfisvandamál okkar án þess að það hafi í för með sér miklar breytingar á lífstíl okkar	1	2	3	4	5	98	99
D.	Hagvöxtur hefur alltaf skaðleg áhrif á umhverfið	1	2	3	4	5	98	99
E.	Hægjast mun á efnahagsþróun á Íslandi ef við hugum ekki að umhverfinu	1	2	3	4	5	98	99
F.	Jörðin getur einfaldlega ekki staðið undir áframhaldandi fólksfjölgun í þeim mæli sem nú er	1	2	3	4	5	98	99
G.	Nánast allt sem við gerum í nútímanum skaðar umhverfið	1	2	3	4	5	98	99

Translated from the ISSP Environment III (2010):

- a. *We worry too much about the future of the environment and not enough about prices and jobs today.*
- b. *People worry too much about human progress harming the environment.*
- c. *Modern science will solve our environmental problems with little change to our way of life.*
- d. *Economic growth always harms the environment.*
- e. *Economic progress in [COUNTRY] will slow down unless we look after the environment better.*
- f. *The earth simply cannot continue to support population growth at its present rate.*
- g. *Almost everything we do in modern life harms the environment.*

14. Hversu sammála eða ósammála ertu eftirfarandi fullyrðingum

		Mjög sammál a	Frekar sammál a	Hvorki sammála né ósammál a	Frekar sammála	Mjög sammál a	Veit ekki	Vil ekki svara
A.	Margar staðhæfingar um umhverfisógnir eru ýktar	1	2	3	4	5	98	99
B.	Það er of erfitt fyrir einhvern eins og mig að gera eitthvað varðandi umhverfið	1	2	3	4	5	98	99
C.	Það er enginn tilgangur í því að gera það sem ég get fyrir umhverfið nema aðrir geri það líka	1	2	3	4	5	98	99
D.	Það eru mikilvægari hlutir í lífinu en það að vernda umhverfið	1	2	3	4	5	98	99
E.	Loftslagsbreytingar er óstöðvandi ferli, við getum ekki gert neitt til að sporna við þeim	1	2	3	4	5	98	99
F.	Útblástur CO ₂ (koltvíoxíðs) hefur takmörkuð áhrif á loftslagsbreytingar	1	2	3	4	5	98	99
G.	Alvarleiki loftslagsbreytinga hefur verið ýktur	1	2	3	4	5	98	99

Translated from the ISSP Environment III (2010):

- a. *Many of the claims about environmental threats are exaggerated.*
- b. *It is just too difficult for someone like me to do much about the environment.*
- c. *There is no point in doing what I can for the environment unless others do the same.*
- d. *There are more important things to do in life than protect the environment.*

Translated from the Eurobarometer 300 / wave 69.2

- e. *Climate change is an unstoppable process; we cannot do anything about it.*
- f. *Emissions of CO2 (Carbon dioxide) has only a marginal impact on climate change.*
- g. *The seriousness of climate change has been exaggerated.*

15. Hversu viljug/ur eða óviljug/ur værir þú til þess að...

		Mjög viljug/ur	Frekar viljug/ur	Hvorki viljug/ur né óviljug/ur	Frekar óviljug/ur	Mjög óviljug/ur	Veit ekki	Vil ekki svara
A.	borga mun hærra vöruverð til þess að vernda umhverfið?	1	2	3	4	5	98	99
B.	borga mun hærri skatta til þess að vernda umhverfið	1	2	3	4	5	98	99
C.	Sætta þig við skerðingu á lífskjörum til þess að vernda umhverfið	1	2	3	4	5	98	99

Translated from the ISSP Environment III (2010):

- a. *How willing would you be to pay much higher prices in order to protect the environment?*
- b. *How willing would you be to pay much higher taxes in order to protect the environment?*
- c. *How willing would you be to accept cuts in your standard of living in order to protect the environment?*

16. Telur þú loftlagsbreytingar í dag vera mikið eða lítið vandamál?

1. Mjög mikið vandamál
 2. Frekar mikið vandamál
 3. Frekar lítið vandamál
 4. Mjög lítið eða ekkert vandamál
-
98. Veit ekki
 99. Vil ekki svara

Appendix B

News frames

Jákvæður rammi – nútíð (Positive present context)

Sérfræðingur við Háskóla Íslands segir nýjustu hagtölur á Íslandi gefa til kynna að efnahagurinn hér á landi standi styrkum fótum og ástæða sé til bjartsýni.

Landsframléiðslan á fyrstu sex mánuðum ársins 2015 jókst um 5,2% að raungildi borið saman við fyrstu sex mánuði ársins 2014. Á sama tíma jókst þjóðarútgjöld um 7,3%. Einkaneysla jókst um 4,4%, samneysla um 1,0% og fjárfesting um 21,2%. Útflutningur jókst um 9,0% og innflutningur nokkru meira, eða um 13,6%. Meðalatvinnuleysi á þessum tíma var 4,7% og verðbólga um 1.3%.

Sérfræðingurinn telur þessar hagtölur skýra birtingarmynd þess að efnahagurinn á Íslandi sé í blóma. ‘Það er engin ástæða til annars en bjartsýni. Hagvöxturinn hér er hærri en hjá öllum helstu viðskiptaþjóðum Íslands á sama tímabili. Leita þarf aftur til síðustu aldar til þess að finna jafnlágar verðbólgutölur og á meðan hafa margar starfsstéttir hér á landi náð umtalsverðum árangri í kjaraviðræðum. Þetta helst í hendur og rífur upp bæði einkaneysluna og fjárfestingu sérstaklega. Þessi auknu þjóðarútgjöld þýða einfaldlega að hér á landi er fjármagn að aukast. Það sem er sérstaklega jákvætt er að þessi aukning er ekki bara tilkomin vegna þenslu fjármálafyrirtækja eins og fyrir hrun, heldur eru fleiri og fjölbreyttari atvinnuvegir, t.a.m. ferðamennska, sem að ýta undir þennan vöxt.’

Neikvæður rammi – nútíð (Negative present context)

Sérfræðingur við Háskóla Íslands hjá Háskóla Íslands segir nýjustu hagtölur á Íslandi gefa til kynna að efnahagurinn standi völtum fótum hér á landi og sé á barmi skells.

Landsframléiðslan á fyrstu sex mánuðum ársins 2015 jókst um 5,2% að raungildi borið saman við fyrstu sex mánuði ársins 2014. Á sama tíma jókst þjóðarútgjöld um 7,3%. Einkaneysla jókst um 4,4%, samneysla um 1,0% og fjárfesting um 21,2%. Útflutningur jókst um 9,0% og innflutningur nokkru meira, eða um 13,6%. Meðalatvinnuleysi á þessum tíma var 4,7% og verðbólga um 1.3%.

Sérfræðingurinn telur þessar hagtölur skýra birtingarmynd þess að efnahagurinn standi völtum fótum hér á landi. ‘Það verður að teljast varhugavert að hagvöxtur hækki um rúm 5% og sé hærri en hjá öllum helstu viðskiptaþjóðum Íslands á sama tímabili. Hagvöxturinn ásamt gífurlegri hækkun í fjárfestingu gefur vísbendingar um undirliggjandi þenslu. Innflutningur eykst umfram útflutning sem hefur í för með sér að viðskiptahallinn eykst. Margar starfsstéttir hafa dregist aftur úr í launakjörum þar sem erfitt hefur reynst að semja um hækkanir og á meðan er atvinnuleysi í tæpum 5%. Ástandið er ekki gott, sé ekki brugðist við getur of mikil þensla sprungið og hrundið af stað samdrætti hvenær sem er. Það leiðir til enn frekara atvinnuleysis auk þess sem verðbólgan getur auðveldlega farið aftur úr böndunum.’

Jákvæður rammi – framtíð (Positive future context)

Sérfræðingur við Háskóla Íslands hjá Háskóla Íslands segir nýjustu hagtölur á Íslandi gefa til kynna að efnahagur fari batnandi á Íslandi og góðir tímar séu framundan.

Landsframleiðslan á fyrstu sex mánuðum ársins 2015 jókst um 5,2% að raungildi borið saman við fyrstu sex mánuði ársins 2014. Á sama tíma jukust þjóðarútgjöld um 7,3%. Einkaneysla jókst um 4,4%, samneysla um 1,0% og fjárfesting um 21,2%. Útflutningur jókst um 9,0% og innflutningur nokkru meira, eða um 13,6%. Meðalatvinnuleysi á þessum tíma var 4,7% og verðbólga um 1.3%.

Sérfræðingurinn telur þessar hagtölur skýra birtingarmynd þess að efnahagurinn á Íslandi muni blómstra eftir 2-3 ár. 'Það er engin ástæða til annars en bjartsýni. Hagvöxtur hefur tekið vel við sér og eykst hraðar en hjá helstu viðskiptaþjóðum landsins. Leita þarf aftur til síðustu aldar til þess að finna jafnlágar verðbólgutölur eins og sjást í dag og ekki bendir til annars en að sá stöðugleiki muni haldast áfram. Á meðan hafa margar starfsstéttir hér á landi náð umtalsverðum árangri í kjaraviðræðum og saman getur þetta skilað aukum kaupmætti á næstu árum. Fjárfesting eykst langt umfram einkaneyslu þannig að fólk er frekar að ávaxta fé sitt og búa í haginn fyrir komandi ár en að taka það út í dag. Það jákvæða er að þessi aukni vöxtur byggir ekki bara á uppgangi fjármálafyrirtækja heldur fjölbreyttari atvinnuvegum en fyrir hrun og stendur fyrir vikið mun styrkari stöðum.'

Neikvæður rammi – framtíð (Negative future context)

Sérfræðingur við Háskóla Íslands segir nýjustu hagtölur á Íslandi gefa til kynna að efnahagurinn stefni í ógöngur á ný og vel megi búast við skelli á næstu árum

Landsframleiðslan á fyrstu sex mánuðum ársins 2015 jókst um 5,2% að raungildi borið saman við fyrstu sex mánuði ársins 2014. Á sama tíma jukust þjóðarútgjöld um 7,3%. Einkaneysla jókst um 4,4%, samneysla um 1,0% og fjárfesting um 21,2%. Útflutningur jókst um 9,0% og innflutningur nokkru meira, eða um 13,6%. Meðalatvinnuleysi á þessum tíma var 4,7% og verðbólga um 1.3%.

Sérfræðingurinn telur þessar hagtölur skýra birtingarmynd þess að efnahagsmál hér á landi stefni í ógöngur innan fárra ára. 'Það verður að teljast varhugavert að hagvöxtur hækki um rúm 5% og sé hærri en hjá öllum helstu viðskiptaþjóðum Íslands á sama tímabili.

Hagvöxturinn ásamt gífurlegri hækkun í fjárfestingu gefur vísbendingar um að hér sé að þenjast út efnahagsbólga. Innflutningur eykst umfram útflutning sem hefur í för með sér að viðskiptahallinn eykst. Margar starfsstéttir hafa dregist aftur úr í launakjörum þar sem erfitt hefur reynst að semja um hækkanir og á meðan er atvinnuleysi í tæpum 5%. Ef ekki verður brugðist við þenslunni og auknum viðskiptahalla getur áhrifa þess byrjað að gæta eftir 2-3 ár og má hugsa sér að það verði með áþekkingu hætti og árið 2008.'

Spurningar:

1. Hagvöxtur...
 - Hefur ekkert breyst frá árinu 2014
 - Er með besta móti samanborið við aðrar þjóðir
 - Hefur aukist með varhugaverðum hætti fyrstu 6 mánuði ársins
 - Veit ekki

2. Gífurleg aukning í fjárfestingu er merki um:
 - Að fjármagn hér á landi sé að aukast
 - þenslu/efnhagsbólunni
 - Fólk er frekar að búa í haginn og ávaxta fé sitt heldur en að eyða því
 - Veit ekki

3. að mati x benda efnahagstölur til að
 - Efnahagurinn á Íslandi standi styrkum fótum í dag
 - Efnahagurinn standi völtum fótum í dag
 - Efnahagurinn muni blómstra á næstu árum
 - Efnahagurinn stefni í ógöngur á næstu árum
 - Veit ekki

4. Hversu læsilegur/vel framsettur eða ólæsilegur/illa framsettur fannst þér textinn?
 - Mjög læsilegur/vel framsettur
 - frekar læsilegur/vel framsettur
 - hvorki læsilegur/vel framsettur né ólæsilegur/illa framsettur
 - ólæsilegur/illa framsettur
 - mjög ólæsilegur/illa framsettur
 - Veit ekki

5. Hversu vel eða illa gekk þér að skilja innihald textans?
 - Mjög vel
 - Frekar vel
 - hvorki vel né illa
 - frekar illa
 - mjög illa
 - veit ekki

Appendix C

Table I

Frequency of the approval of the Dreki-Area oil exploration

‘Do you favor or oppose the search for oil at the Dreki-Area?’	Frequency	Percent	Cumulative percent
Strongly favour	126	21.1	21.1
Somewhat favour	154	25.8	46.9
Neither favour nor oppose	116	19.4	66.3
Somewhat oppose	92	15.4	81.7
Strongly oppose	109	18.3	100.0
Total	597	100.0	

Table II

Frequency of the perceived issue importance of an oil extraction at the Dreki-Area.

‘How important an issue do you consider the oil extraction on the Dreki-Area to be?’	Frequency	Percent	Cumulative percent
Very important	96	16.5	16.5
Rather important	129	22.1	38.6
Neither important nor unimportant	210	36.0	74.6
Rather unimportant	78	13.4	88.0
Very unimportant	70	12.0	100.0
Total	583	100.0	

Table III

Frequency of the perceived familiarity with the possible impacts/results of an oil extraction at the Dreki-Area.

‘How familiar do you consider yourself to be with the impacts and/or results which may emerge from an oil extraction at the Dreki-Area, should it materialize?’	Frequency	Percent	Cumulative percent
Very familiar	34	5.5	5.5
Rather familiar	182	29.6	35.1
Neither familiar nor unfamiliar	220	35.8	70.9
Rather unfamiliar	107	17.4	88.3
Very unfamiliar	72	11.7	100.0
Total	615	100.0	

Table IV

Participants' opinion of the most important factors when considering an oil extraction at the Dreki-Area.

Which of these factors do you consider the most important when considering an oil extraction at the Dreki-Area?	Frequency	Percent	Cumulative Percent
Social factors	128	22.6	22.6
Environmental factors	320	56.4	79.0
Economic factors	119	21.0	100.0
Total	567	100.0	