

Explicating the Values-Issue Consistency Hypothesis through Need for Orientation

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ABSTRACT *The values-issues consistency hypothesis posits that when the issues covered in the news resonate with people's values, the power of the news media in setting the public agenda is stronger. However, we know little about the process by which values influence the agenda-setting process. We argue that the need for orientation (NFO) is a key mediating variable of the relationship between values and issue salience. To test this proposition, we conducted two studies: an experiment to examine the causal relationship between values, NFO, and issue salience, and a secondary data analysis of a nationally representative survey, in order to test the generalizability of the experiment's results. Both studies provide support for the mediating role of NFO, further advancing research on the psychology of agenda setting effects.*

KEYWORDS *Media effects; Values; Need for orientation; Agenda setting*

RÉSUMÉ *L'hypothèse de cohérence entre valeurs et problèmes (values-issues consistency hypothesis en anglais) propose que quand les thèmes abordés dans les nouvelles ont résonance avec les valeurs des personnes le pouvoir des médias dans l'établissement de l'agenda public est plus fort. Cependant, nous savons peu sur le processus par lequel les valeurs influencent l'établissement de l'agenda setting. Nous soutenons que la nécessité d'orientation (NFO en anglais) est une variable médiatrice clé de la relation entre les valeurs et la prééminence de certains thèmes. Pour tester cette proposition, nous avons développé deux études: 1) une expérience pour examiner le lien de causalité entre les valeurs, NFO, et la prééminence de thèmes; 2) et une analyse secondaire des résultats de un sondage nationale où il a été utilisé un échantillon représentative. Les deux études soutient le rôle médiateur de la nécessité d'orientation (NFO), faire progresser la recherche sur la psychologie des effets de agenda setting.*

MOTS CLÉS *Effets des médias; Valeurs; Nécessité d'orientation; Agenda setting*

Introduction

Chief among the psychological determinants of citizens' decision-making, human values—people's worldviews and the goals they hold for their society and community—

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have been related to a variety of cognitive, attitudinal, and behavioural decisions. Gordon Allport (1961) argued that values were the “dominating force in life” (p. 543) because they directed all of an individual’s behaviour toward their realization. Extant empirical work has repeatedly demonstrated that values can be powerful moderators of media effects. For instance, postmaterialist values (e.g., protecting the environment) have been positively related to news use and political discussion, whereas materialist values (e.g., fighting crime) have been linked to entertainment media and less frequent political discussions (McLeod & Sotirovic, 1998). Framing effects on decision-making have also been related to how strongly people hold certain values (Shah & Domke, 1996). Recently, Sebastián Valenzuela (2011) found that values could amplify and/or dampen the ability of the media to influence the issues the public perceives as important for government and policymakers to address (i.e., agenda-setting effects), depending on the degree of consistency between individuals’ values and the values primed by news coverage.

Despite the clout agenda setting has gained as a communication theory in the United States, Europe, Asia, and Latin America (see McCombs, 2004), it has rarely been featured in scholarly publications in a Canadian context. However, it does not mean that knowledge in this area of media effects is not advanced. Canadian scholar Stuart Soroka (2002), for example, described the nature of issues that are covered in the media and how they lead to different agenda-setting dynamics between the media, the public, and lawmakers. Gennadiy Chernov (2010) simultaneously tested agenda setting and attitudinal effects based on the difference in personal experience with specific issues. Kwamena Kwansah-Aidoo (2003) demonstrated the importance of socio-cultural context on agenda-setting effects. These works suggest that agenda setting is of interest to communication scholars in Canada.

When the issues in the media resonate with people’s values, it was argued, the power of the media in setting the public agenda is stronger. However, no mediating mechanism has been tested so far to explain how values affect the perceived importance due to issue salience. Issue salience and agenda-setting effects are related, of course, but not interchangeable. The latter are more on the receiving end of the transfer from the media agenda to the public agenda describing heightening issue prominence on behalf of the public (McCombs, 2004). Issue salience is a complex concept encompassing both the characteristics of the media messages and the public. Spiro Kiouis and Maxwell McCombs (2004) stressed the interplay of three dimensions of this concept—attention, how often the stories mention an issue, prominence, how visible these issues are in the context of other stories, and valence, the tone of the messages about the issues. These factors heighten the agenda-setting effects when they are present.

The central research question addressed in the current study is to test whether values can influence the power of the media to set the agenda of issue priorities by determining first people’s need for orientation (NFO), the key psychological determinant of agenda setting that researchers have used to explain variations in the size of agenda-setting effects (Matthes, 2006, 2008; Weaver, 1977, 1980). In other words, we propose and test whether NFO is a mediator of the influence values have on agenda-setting effects. From this research question, we derive several hypotheses that will be tested

using a laboratory experiment and a secondary analysis of survey data, both conducted in Canada.

As Chernov, Valenzuela, and McCombs (2011) noted, NFO describes “individual differences in the desire for orienting cues and information [and] explains differences in attention to the media agenda and, consequently, differences in the degree to which individuals accept the media agenda” (p. 143). The key subdomains of NFO—uncertainty and relevance—allow for a finer distinction of the values-issue salience relationship. As Thomas Nelson, Sophie Lecheler, Andreas Schuck, and Claes de Vreese (2012) put it, “even if values are important aspects of our political selves, there is flexibility in the way we reason about values in relation to particular issues” (p. 23). Although Jorg Matthes (2008) claimed that NFO is a dominant motivational factor in the agenda-setting process, he failed to demonstrate that NFO influences how the affective tone of the issues is perceived. Lindita Camaj and David Weaver (2013) also confirmed that NFO does not predict what issue attributes are important for the agenda-setting effects. The latter authors suggested that people’s prior beliefs and attitudes may be equally important factors for predicting agenda-setting effects.

Values are considered to influence attitudes. As Valenzuela (2011) demonstrated, values are legitimate antecedents of agenda-setting effects. We, more specifically, advance the proposition that values can be an antecedent of NFO, which, in turn, is a more immediate determinant of issue salience judgments. In other words, NFO is instrumental for this study because it is an important psychological variable that may mediate the link between values and issue salience, the key outcome variable in agenda setting. To test this proposition, we conducted two studies: an experiment to examine the causal relationship between values, NFO, and issue salience, and a secondary data analysis of a nationally representative survey, in order to test the generalizability of the experiment’s results.

The values-issue consistency hypothesis

According to Ronald Inglehart (1977), materialist values refer to security and survival goals that can be attained by material means, such as economic growth and maintaining public order. Postmaterialist values, in turn, emphasize autonomy and quality of life aspects, prioritizing goals such as self-expression, protecting the environment, and achieving gender equality. They are postmaterialist in the sense that they do not refer to material or economic conditions per se. Individuals may hold mostly materialist values, mostly postmaterialist values, or have a mixture of both. For this reason, comparing materialistic and postmaterialistic individuals or groups based on these distinctions, should be interpreted as a comparison of dominant value orientations.

Previous research on the moderating role of values on the strength of media effects (Schemer, Wirth, & Matthes, 2012; Shah & Domke, 1996) suggests that agenda-setting effects should be stronger when the topics in the news agenda resonate with individuals’ values. Based on this premise, Valenzuela (2011) advanced a values-issues consistency hypothesis that posits that for postmaterialist individuals, coverage of postmaterialist issues will more likely lead to more robust agenda-setting effects than coverage of materialist issues. Conversely, for materialists, media attention to materialist issues should be more influential than media attention to

postmaterialist issues because materialist issues resonate more with their beliefs and basic goal orientations.

Among the possible explanations for this link, Valenzuela (2011) cited selectivity research (Atkin, 1985) and John Zaller's (1992) model of public opinion formation. According to the selective perception and selective retention hypotheses, individuals tend to automatically process more attentively and recall messages that are congruent with their existing values and attitudes. Consequently, people with materialist values should be biased in their information processing toward eminently materialist issues, while people with postmaterialist values should be biased toward postmaterialist issues. On the other hand, Zaller demonstrated that the greater a person's level of cognitive engagement with an issue, the more likely she or he is to be exposed to and to comprehend media messages concerning that issue, though people tend to resist arguments that are inconsistent with their values and beliefs. Hence, materialists' and postmaterialists' issue agendas should be different because their comprehension and acceptance of the mix of materialist and postmaterialist issues in the media agenda is different. However, agenda setting researchers do not share this model's reliance on selective exposure (McCombs, 2004) and on topical salience only (Ha, 2011). These explanations notwithstanding, in the current study we present the case for examining NFO as a more likely explicating mechanism for the values-issue salience link.

Values and need for orientation

Ever since David Weaver (1980) highlighted relevance and uncertainty as the key components of NFO, researchers have agreed that relevance is the most substantive aspect. In other words, variations in the relevance people attach to issues, public figures, and other elements of the media agenda are directly related to variations in the strength of agenda-setting effects. If a topic, say the environment, is not relevant to an individual, the amount of coverage devoted to urban pollution in the news will not exert a noticeable influence on the salience of the environment for that individual. As Joe Bob Hester and Rhonda Gibson (2007) put it: "Relevance must first occur" (p. 303).

Dixie Evatt and Salma Ghanem (2001) identified two substantive aspects of relevance, social relevance and personal relevance, and an affective aspect, emotional relevance. People can recognize that an issue may be important for society even if it is not important for their personal life. Emotions, in turn, can increase the relevance of an issue even if it is not personally or socially relevant. Values could be related to all three of these sources of relevance. Holding postmaterialist values should increase people's awareness of social issues related to quality of life and self-expression. The same should be true of materialist values and the relevance of crime, inflation, and other issues related to physical and economic security. Connecting these societal issues to how they affect people's personal life could also be made easier if there is consistency between people's values and the issues on the media and public agendas. This is because individuals' values can provide frameworks of reference to process this type of information more effectively (Feldman, 2003). In other words, value resonance can help people determine which issues they find personally relevant and, thereby, are more salient. Values can also indicate domains of emotional relevance (Grob, 1995). The clearest example is hot button issues. For people who hold strong conservative or

liberal values, media coverage of abortion, same-sex marriage, and similar issues will more likely elicit strong emotional reactions compared to other topics. And because they elicit these responses, it is more likely that these individuals will pay more attention to these issues and name them when a survey asks what is the most important problem facing the country.

Relatedly, the process by which personal relevance translates into social relevance further suggests a connection between values, NFO, and issue salience. Judgments of relevance are, to some extent, guided by values. The guiding role of values depends on whether personally held values are shared by other people, adding a societal component to many of them. This opens the possibility for the projection of personal relevance into social relevance motivated by personally held values. As Milton Rokeach (1973) argued: "The more widely shared a value, the greater the societal demands placed upon us and therefore the greater the 'oughtness' we experience" (p. 8). Also, people's value orientations about the world are not independent from their inner orientations because values refer to "both to features of the world toward which people are oriented and to features of people that govern their orientation toward the world" (Smith, 1991, p. 5).

In order to test these propositions, we put forward three hypotheses. The first two are somewhat self-evident but provide the necessary foundation for testing the main hypothesis of mediation. The first hypothesis is basically a statement about the known relationship between NFO and agenda setting (Matthes, 2008; Weaver, 1980): There is a positive relationship between individuals' need for orientation about an issue and the salience of that issue (H₁). For the reasons cited earlier, we also expect that there is a positive relationship between individuals' materialist and postmaterialist values and their need for orientation about materialist and postmaterialist issues, respectively (H₂). Now, if NFO is a closer determinant of agenda setting, and values are predictive of NFO, it flows logically that values can exert an influence on judgments of national importance indirectly through NFO. This means that NFO should mediate, at least partially, the relationship between values and agenda setting. In hypothesis form, the expectation is that the need for orientation mediates the relationship between individuals' materialist and postmaterialist values and the salience of materialist and postmaterialist issues, respectively (H₃).

Values are regarded as primary sources of influence rather than the other way around because they tend to be quite stable over time, operating similarly to personality traits. In the Valenzuela (2011) study, for instance, the test-retest correlation coefficient of the index measuring postmaterialist values over a two-year period was a strong .55. Excluding individuals in the mixed category and comparing pure materialists and postmaterialists only, the reliability coefficient increased to .85. The same was not true for the agenda-setting susceptibility index; the reliability coefficient over the same period for this variable was only .25. Put another way, it is more likely that values operate as a source of issue salience judgments than the other way around.

To formally test the hypotheses, we conducted two studies. To sort out the causality quandary, we first developed an experiment, the procedures of which are detailed in the following section (Study 1). To bolster the external validity of the results of the

experiment, we tested the hypotheses with a secondary data analysis of a nationally representative survey (Study 2).

Study 1: Experimental evidence

Study 1 was conducted in February 2011 in a midsize Canadian university and employed an experimental design to test the hypotheses about the positive relationships between values, NFO, and issue salience. Experiments have become one of the key research tools to explore both basic agenda-setting effects and mediating factors in the agenda-setting process (McCombs, 2004). Although the experimental tradition within agenda setting emerged in studies using television news stories (Iyengar & Kinder, 1987), previous studies have successfully employed print stories as experimental stimuli (e.g., Kioussis, Bantimaroudis, & Ban, 1999; Miller, 2007). Here, we follow the latter tradition using newspaper articles as stimuli.

A pre-test/post-test design was used in this experiment. All participants were college students who read stories about materialist and postmaterialist issues in both conditions, but the number of newspaper articles about each issue varied. Students read three articles about Canadian national unity (the postmaterialist issue) and one about drug abuse (the materialist issue) in one condition, and read three articles about drug abuse and one about national unity in another condition. National unity is regarded as a postmaterialist goal because it is related to culture rather than economics or personal safety. Drug abuse harms users' health and can lead to criminal behaviour and, therefore, is classified as materialist (but see Lindström, 2007). The articles about the dominating issue in each condition were also placed at the beginning and at the end of treatment packages to account for the primacy/recency effect.

Participants

Two hundred and forty three students (participants ranged in age from 18 to 32 years old) volunteered to take part in the experiment. Two hundred and thirty six questionnaires were turned in, eight of which were either spoiled or incomplete. In the end, 228 questionnaires were used for the data analysis (for national unity, the total number in the sample (N) = 123; for drug abuse, N = 105).

Materials

Stories were selected from Canadian newspapers with nationwide circulation—the *Toronto Star* and the *Globe and Mail*. The articles were edited to 400 words or less each. The articles about the issue of drug abuse dealt with legislative acts against selling prescription drugs over the internet; the problem of increasing use of illegal drugs by high school students; and accidental addiction to pain killers. The stories about the issue of national unity addressed such aspects as the silent support for separatist sentiments by the Québec Liberal Party; hostility on behalf of some Québec parties toward the symbols of nominal power of the British Crown; and the effort on behalf of some separatist activists to remove the word “Canadiens” from the name of the hockey club Montréal Canadiens.

Measures

Three key variables were measured using items employed in previous research, includ-

ing issue salience, NFO, and postmaterialist values. In order to facilitate the statistical analyses, all variables were operationalized as continuous. Descriptive statistics of the variables are available in Table 1.

Table 1: Descriptive statistics for variables in Study 1

	Mean (<i>M</i>)	Median (<i>Mdn</i>)	Standard deviation (<i>SD</i>)	Minimum	Maximum
Postmaterialist values	2.76	3.00	1.22	0.00	6.00
NFO drug abuse	6.20	6.00	1.85	2.00	10.00
NFO national unity	5.95	6.00	1.75	2.00	10.00
Salience of drug abuse	7.53	8.00	1.79	3.00	10.00
Salience of national unity	6.43	6.00	1.88	2.00	10.00

Values

The pre-test questionnaire used Inglehart’s (1990) 12-item index to assess participants’ postmaterialist values. This is a more reliable version of the initial four-item index (Inglehart, 1977). Three sets of questions invited students to choose two out of four of the most significant goals the country should focus on. Half of the response choices included in each set were materialist goals (e.g., “The fight against crime,” “A high level of economic growth”) and postmaterialist goals (e.g., “Giving people more say in important government decisions,” “Protecting freedom of speech”). Subsequently, a scale was computed ranging from 0 (pure materialist) to 6 (pure postmaterialist). We treat this variable as continuous in order to be consistent with our conceptualization of values, which range from dominantly materialist to dominantly postmaterialist, including a balanced composition of materialist and postmaterialist goals.

Need for orientation

Participants answered questions that measured both relevance and uncertainty—the key NFO subdomains. Relevance was measured as a semantic differential capturing the level of concern about, and interest in, national unity and drug abuse on a scale from 1 (“no concern at all,” “uninteresting”) to 5 (“a lot of concern,” “very interesting”). Certainty was gauged by the level of agreement participants had with two statements regarding how much they felt they knew about, and how confident they were in their knowledge of, the issues in the articles, with responses ranging from 1 to 5 (“totally disagree” to “totally agree”).

Issue salience

Borrowing from classic agenda-setting research (McCombs, 2004), participants’ opinions about the importance of national unity were gauged in the post-test questionnaire using two items that were asked after reading the treatment materials. Participants were asked to rate, on a five-point scale, how important the following issues were as a

problem facing their country today: drug abuse, crime, global warming, the economy, education, elections in Canada, healthcare affordability, immigration, the war in Afghanistan, national unity, poverty, and terrorism. Additionally, participants rated on a five-point scale the extent to which they thought each of these issues were deserving of additional government action. Lastly, the scores on both items for national unity were summed to compile an index of public salience.

Results

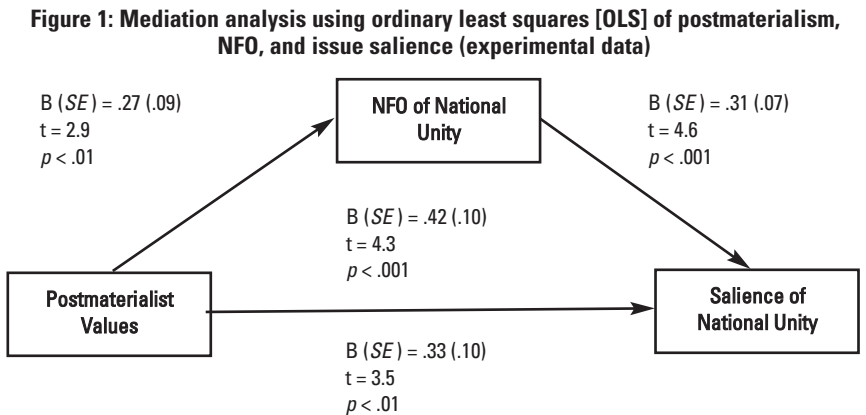
Before testing the hypotheses, it was important to check if the manipulation worked in the intended direction, that is, that the amount of articles read about an issue was correlated with the salience judgments of that issue. In the absence of this agenda-setting effect, consideration of its antecedents and mediating variables is obviously debatable. The results of independent *t*-tests (*t*) conducted to ascertain the statistical significance of the difference in means of issue salience indicated that the experiment produced agenda-setting effects. For participants in the materialist issue condition, drug abuse was far more prominent than national unity ($t(104) = 7.9, p < .001$; drug abuse, $M = 7.8, SD = 1.7$; national unity, $M = 6.2, SD = 1.8$). Participants in the post-materialist condition also rated drug abuse as more important and worthy of government action than national unity, but the difference was remarkably smaller ($t(122) = 3.0, p < .01$; drug abuse, $M = 7.3, SD = 1.8$; national unity, $M = 6.7, SD = 1.9$). In fact, a comparison of the salience ratings of drug abuse and national unity across treatment groups revealed statistically significant differences that operated in the expected direction. The prominence of drug abuse was higher in the materialist issue condition than in the postmaterialist issue condition ($t(226) = 2.2, p < .05$; materialist condition, $M = 7.8, SD = 1.7$; postmaterialist condition, $M = 7.3, SD = 1.8$). Conversely, salience of national unity was higher in the postmaterialist issue condition than in the materialist issue condition ($t(226) = 2.0, p < .05$; materialist condition, $M = 6.2, SD = 1.8$; postmaterialist condition, $M = 6.7, SD = 1.9$).

Turning now to the hypotheses, H_1 stated that there is a positive relationship between individuals' NFO about an issue and the salience of that issue. The results of the experiment supported this hypothesis. Controlling for treatment condition, NFO of national unity was a positive predictor (standardized regression coefficient [β] = .291, statistical significance [p] < .001) of salience of national unity, whereas NFO of drug abuse was not ($\beta = .077, p > .20$). Conversely, NFO of drug abuse was a positive predictor of salience of drug abuse ($\beta = .504, p < .001$), whereas NFO of national unity was not ($\beta = -.145, p < .05$).

H_2 , predicting that there is a significant relationship between individuals' materialist and postmaterialist values and their need for orientation about materialist and postmaterialist issues, was partially supported. When controlling for the treatment group, Inglehart's index of values (i.e., where postmaterialism scored higher) was predictive of NFO of national unity ($\beta = .189, p < .01$) but was not significantly associated with NFO of drug abuse ($\beta = -.006, p > .20$).

Building from the results of H_1 and H_2 , we tested H_3 —the key hypothesis of the study—by estimating the indirect relationship between values and issue salience via NFO using the INDIRECT macro developed by Kristopher Preacher and Andrew Hayes (2008)

for the SPSS software (IBM, n.d.). The main advantage of this procedure is that indirect relationships are estimated with the bootstrapping method (i.e., 1,000 bootstrapped bias corrected resamples), which allows us to estimate confidence intervals of the estimated effects based on the actual distribution of the data rather than assuming a normal distribution. As shown in Figure 1, in line with H3, adding NFO reduces the size of the regression coefficient estimating the direct effect of values on issue salience by approximately one-fifth, a reduction that is statistically significant at $p < .01$. Specifically, the bootstrapped 95 percent bias-corrected confidence intervals (.03, .17) indicate that NFO is a significant partial mediator of the relationship between postmaterialist values and the salience of national unity. Of course, because H2 was not supported for the issue of drug abuse, the test of mediation for the materialist issue also yielded no statistically significant result (i.e., the bootstrapped 95 percent bias-corrected confidence intervals [-.10, .09] included zero). Therefore, the experiment resulted in partial support for H3.



Note. $N = 228$. A dummy variable controlling for the treatment group was included in the estimation but omitted from the figure for ease of presentation. B = unstandardized regression coefficient, SE = standard error, t = t value, p = statistical significance. Values between postmaterialist values and salience of national unity above the arrow are before the entry of NFO of national unity and below the arrow are after the entry of NFO of national unity.

Study 2: Survey-based evidence

The results of the experiment provided support for the hypothesis that NFO mediates the relationship between values and issue salience, at least for the postmaterialist issue of national unity. To replicate and bolster the generalizability and external validity of the findings reported so far, we tested the hypotheses with data from a representative sample of Canadian adults collected for the 2010–2011 wave of the International Social Survey Programme (ISSP), which contained a special module on environmental issues (ISSP Research Group, 2010). Because the survey did not probe extensively on issues other than the environment, the analysis reported below is restricted to this postmaterialist issue only. We come back to this limitation in the discussion section.

Sample

The Carleton University Survey Centre conducted the Canada ISSP 2010–2011 via a self-administered mail survey between January and April 2011. To ensure adequate rep-

resentation of the Canadian adult population, a stratified random sampling technique was employed to recruit respondents based on contact information obtained from telephone directories. An initial sample of 5,000 mail surveys was distributed, of which 985 usable responses were received, for a response rate of 21.3 percent based on RR1 calculation of the American Association of Public Opinion Research (AAPOR). The data provided by ISSP contained a sampling weight, which was employed in the subsequent analysis to make the estimates more representative of Canadian population parameters. Sample characteristics are available on the ISSP's website.

Measures

POSTMATERIALISM

The ISSP employed Inglehart's (1977) classic measure of postmaterialism. Specifically, respondents were asked to choose the two most important goals for their country among four alternatives: maintain order in the nation; give people more say in government decisions; fight rising prices; and protect freedom of speech. Respondents who chose maintaining order and fighting rising prices were scored with a 0 in postmaterialism. Respondents scored 1 if one of their choices was materialist and the other postmaterialist, and 2 if both their choices were postmaterialist.

NEED FOR ORIENTATION

Similar to the index described in Study 1, NFO was a composite measure of indices gauging the relevance and uncertainty of the environment issue. Relevance was an additive index of items gauging concern for the environment (Cronbach's $\alpha = .80$). Uncertainty was gauged with an index of knowledge about the causes and solutions of environmental problems (Cronbach's $\alpha = .84$). Subsequently, relevance and uncertainty were multiplied to create an interactive term measuring NFO.

ISSUE SALIENCE

Respondents were asked, in closed-ended fashion, which two issues were "the most important for Canada today." Response choices included healthcare, education, crime, the environment, immigration, the economy, terrorism, poverty, none of these, and cannot choose. A dummy variable was created from responses mentioning the environment—the typical postmaterialist issue.

CONTROL VARIABLES

Based on previous research about the antecedents of public opinion about the environment (Franzen & Meyer, 2009), the following variables were included in the analysis as controls: sex, age, education, income, and an index of perceived environmental quality (Cronbach's $\alpha = .81$). Descriptive statistics of the variables are available in Table 2.

Results

To test the hypotheses, we employed once again Preacher and Hayes' (2008) INDIRECT macro for SPSS, as it enabled us to estimate simultaneously the structural paths between postmaterial values, NFO, and issue salience, controlling for the other variables. The dependent variable, in this case, was the dummy variable (i.e., coded 0 or 1) measuring if the environment was named as the most important problem facing the country. Thus, the model was estimated with a binary logistic regression model (Table 3).

Table 2: Descriptive statistics for variables in Study 2

	<i>M</i>	<i>Mdn</i>	<i>SD</i>	Minimum	Maximum
Postmaterialist values	1.02	1.00	0.59	0.00	2.00
NFO environment	10.38	10.20	4.27	1.80	25.00
Salience of environment	0.28	0.00	0.45	0.00	1.00
Sex (female)	1.56	2.00	0.50	1.00	2.00
Age (years)	45.63	44.00	17.11	18.00	89.00
Education (years)	15.94	16.00	6.81	5.00	30.00
Income (Canadian dollars)	9,908.72	5,500.00	17,963.54	0.00	200,000.00
Perceived environmental quality	2.26	2.29	0.64	1.00	4.43

Table 3: Logistic regression analysis, full results for Study 2:
Survey-based evidence

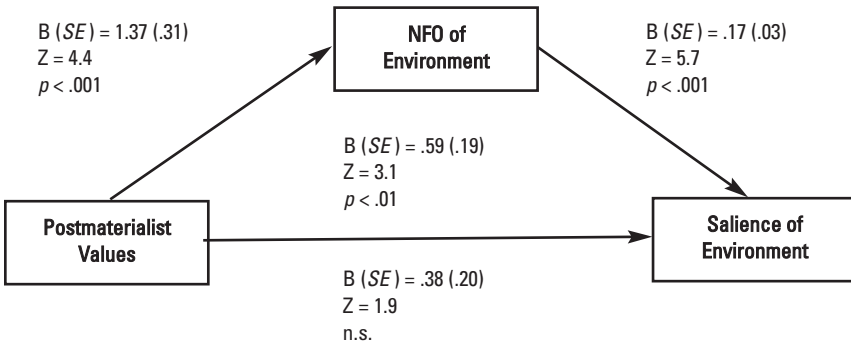
	Dependent variable: Salience of environment			
Independent variables:	<i>B</i>	(<i>SE</i>)	<i>Z</i>	<i>p value</i>
Sex (female)	-0.18	0.23	-0.77	0.44
Age (years)	0.004	0.01	0.46	0.64
Education (years)	-0.06	0.04	-1.61	0.11
Income (Canadian dollars)	0.00	0.00	-0.27	0.78
Perceived environmental quality	-0.90	0.20	-4.42	0.00
Postmaterialist values	0.38	0.20	1.92	0.05
NFO environment	0.17	0.03	5.70	0.00

Note: Valid cases = 473. Nagelkerke $R^2 = 0.24$. *B* = unstandardized logistic regression coefficient. (*SE*) = standard error. *Z* = z value. *p* = statistical significance.

As shown in Figure 2, the analysis of the survey data was consistent with H1, positing that a higher NFO about the environment is predictive of naming the environment as the most important problem (odds ratio = 3.94, $p < .001$). In addition, as stated in H2, there was a positive, strong relationship between the index of postmaterialism and NFO about the environment (odds ratio = 1.19, $p < .001$). Most importantly, we found that NFO was a mediator of the effects of values on issue salience judgments. As shown, adding NFO to the model reduced the size of the coefficient estimating the

direct effect of values on issue salience to statistical nonsignificance (from odds ratio = 1.80, $p < .01$ to odds ratio = 1.45, $p > .20$). Specifically, the bootstrapped 95 percent bias corrected confidence intervals (.12, .38) suggest that the effects of postmaterialism on issue salience operate (partially at least) through heightened NFO. The survey-based evidence, then, supported H3.

Figure 2: Mediation analysis using logistic regression of postmaterialism, NFO, and issue salience (survey data)



Note: $N = 496$. Control variables were included in the estimation but omitted from the figure for ease of presentation. B = unstandardized logistic regression coefficient, SE = standard error, Z = z value, p = statistical significance. Values between postmaterialist values and salience of the environment above the arrow are before the entry of NFO of environment and below the arrow are after the entry of NFO of environment.

Discussion

The findings of both the experiment and the survey data analysis indicate that, first, people with materialist values tend to perceive the coverage of materialist issues as more prominent than people with dominating postmaterialist values, whereas the latter tend to assign more prominence to the coverage of postmaterialist issues than the former. Of course, values are not the only source of issue salience, as evidenced by the fact that participants with dominating postmaterialist values still ranked the drug abuse issue rather high. Nevertheless, the study confirmed Valenzuela's (2011) hypothesis that individuals' values are correlated with how salient they rate different issues. In other words, values are a factor that determines issue salience and, thus, agenda-setting effects (also Valenzuela, 2013). This is an important finding in itself because the exploration of the link between values and agenda setting is at the initial stage. These results open another venue for investigating the role of psychological determinants of the agenda-setting process, in a similar vein as previous studies that demonstrated the impact of motivations, such as need for orientation (Chernov, Valenzuela, & McCombs, 2011), and attitudes (Kioussis & McCombs, 2004). Furthermore, replications of existing studies are called highly desirable both in the broader field of communication (Benoit & Holbert, 2008) and agenda-setting theory itself (McCombs, 2004).

A more novel hypothesis, i.e., that individuals' postmaterialist values and their need for orientation about postmaterialist issues are positively related, was supported

as well. It should not come as a surprise that strongly held values orient people and direct them to sources of relevance. Certainty about what the issues are and how they are interpreted might also depend on what values people hold. It is not only that values are connected to what is relevant for the audience; it is also about the direction and certainty to which values might guide our interpretations of issues. The growing evidence that values play a stronger role in issue evaluations seems to be manifest in the relative success of news media outlets with more partisan, value-laden coverage. Shanto Iyengar and Kyu S. Hahn (2009) and Natalie Stroud (2010) demonstrated that partisan media deepens audience polarization on the issues that involve deeply ingrained beliefs and values. However, this polarization seems to affect the positions taken about issues, not the selection of issues themselves.

The hypothesis that there is a positive relationship between individuals' NFO about an issue and the salience of that issue was partially supported. This additional confirmation of the role of NFO as a motivational variable of agenda-setting effects is consistent with a view of an active role and participation on the part of those who are exposed to media messages. It is not only the way media outlets arrange the issues they cover in a certain rank that makes people assign these same issues a certain level of importance. Values can be a source of relevance that shape the ways we evaluate media cues of issue salience.

The third hypothesis about the mediating role of NFO between individuals' post-materialist values and the salience of postmaterialist issues was also partially supported. As internalized representations and moral beliefs, values are stable and general (Feldman, 2003; Inglehart & Abramson, 1999). However, the specific coverage of salient issues in the media is fluctuating and specific. It is likely that in situations of values-issues consistency, people become more engaged in the process of evaluating media messages. This process of engagement triggers a motivational aspect—need for orientation—which, in turn, has a dual effect. On the one hand, it affects the importance assigned to salient media messages. This conclusion, however, is qualified by the fact that NFO is shaped by people's values, which give cues on how to evaluate the prominence of issues in the media agenda.

Nevertheless, the second and third hypotheses were mainly supported for the post-materialist issue, not the materialist issue and thus the qualification of "partial support" of these predictions mentioned earlier. This is a limitation of the study that needs to be addressed by future research. Unfortunately, the survey data employed could not address this issue because it only contained measures about postmaterialist issues. Nevertheless, we do not see it as a fatal flaw, considering that our argument is not about specific values influencing agenda-setting effects but, more generally, that values—whether materialist or not—may moderate agenda setting through need for orientation.

As with any empirical study, there are other limitations that need to be addressed. Experiments are vulnerable to issues that threaten their validity. Although randomization helps alleviate most of them, one-session experiments are prone to fluctuations in effect size. It is always a question how far we can generalize on the basis of such an experiment, considering possible differences in terms of people, locations, and different time periods. Then, it is important to consider the outside cycle of issues that rise into

prominence both in real life and in media coverage. For example, environmental issues used to, at times, top the list of what Canadians thought of as the most urgent concern. However, after the financial crisis of 2008, the economy has garnered more attention from both the public and the media. Yet, environmental concerns are related more closely to postmaterialist values, while the economy is more related to materialist values. In this sense, the validation of the experimental evidence with survey data increases the confidence on the validity and applicability of our findings.

Another question that deserves attention is about whether there might be some confounding overlap among independent, mediator, and dependent variables. For instance, Daphna Oyserman (2002) has argued that values have aspects of both relevance and salience. The confusion can stem from determining personal relevance of an issue as a function of its media salience and, in turn, use this information as an indicator of one's values in order to achieve values-issues consistency.

Future research has to address these limitations by extending the number of experimental sessions and trying to detect the stability of agenda-setting effects over time. Also, studies should be conducted to simultaneously test the relations between values, NFO, and agenda setting in different countries—making certain the impact of cultural and political differences is controlled. Finally, future research should emulate our effort to combine experimental studies with survey studies of public opinion to obtain more conclusive evidence in support of the role of psychological variables in the process of agenda setting.

Websites

American Association of Public Opinion Research, Response Rates, <http://www.aapor.org/AAPORKentico/Education-Resources/For-Researchers/Poll-Survey-FAQ/Response-Rates-An-Overview.aspx>

International Social Survey Programme, <http://www.issp.org>

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