Is it what you say, or how you say it?
An experimental analysis of the effects of invitation wording for online

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Abstract

Survey practitioners employ various reward and incentive structures directed at respondents in order to maximize response rates. For online and postal surveys, an aspect of this engagement with respondents is the use of covering letters requesting participation. In this research note, we report the results of a quasi-experimental research design, in which respondents to an online survey are re-contacted and asked to participate in an additional survey. We formulate 8 different email 'cover letters' that tap into three dimensions of variation: altruistic-egoistic appeals, formal-informal writing styles, and linguistically simple-complex formulations. We analyze the differential effects stemming from cover letter variation, finding that linguistically simple formulations and altruistic appeals register highest response rates.

Introduction

In this article, we present results from a study of how varying email 'cover letters' in the implementation of an online survey can influence response rates. Historically, there is little evidence that the content of survey cover letters has a strong effect on response rates in off-line survey environments (Harvey, 1987), although empirical research on this question is limited and some research has pointed to small, but significant effects due to varying letter content (see Brennan, 1992; Redline et al., 2004). Online self-completion surveys differ from paper versions in that the link that survey targets must click on to complete the survey is embedded in the 'cover letter' email. As such, we have reason to suspect that the contents of such emails may affect the likelihood that targets respond to the survey, as well as influencing the quality of the responses that they provide.

Survey response maximization is a core issue of public opinion research, and the attention being devoted to this issue by practitioners is on the rise (Biemer, 2010; Curtin, Presser & Singer, 2000; Platek & Särndal, 2001). While Internet surveying makes it easy to contact people in larger numbers and thus minimize sampling error, non-random 'opt-in' online panels face problems of significant coverage error and high response error relative to other modes (Couper, 2000; 2011). However, Chang and Krosnick (2009) find that online surveys perform well, relative to other modes, in terms of response quality. As such, to fully capitalize on the potential advantages offered by online public opinion data collection, it is important that academics and practitioners be intent on maximizing response rates in every aspect of the design of online surveys. Several studies have found that techniques such as monetary incentives, advance letters and telephone follow ups, questionnaire design, can serve to improve response rates (Dillman, 2007; Christian, Dillman & Smyth, 2008; Rao, Kaminska & McCutcheon, 2010). However, gains from these methods come with associated

costs in terms of expense and time for public opinion researchers. Compared to such incentives, the content and tone of emails soliciting survey response are a relatively low-cost design feature (the cost being time spent by research staff constructing, loading, and sending emails). In this research, we examine whether this low-cost design feature can be systematically manipulated to alter response rates.

We conceptualize the online 'cover letter' as a persuasive document, designed to influence the motivations of respondents in such a way that they are more likely to respond to the survey. We focus on three aspects of the email message that online survey respondents receive: the type of appeal made to the respondent, the complexity of the message, and the tone of the email. We composed 8 email 'cover letters' which comprise differing combinations of these dimensions. A large panel of Dutch Internet survey volunteers (approximately 11300 respondents from the 'Kieskompas.nl' website) was then randomly assigned to one of 8 groups – with each group receiving our experimental 'treatment' of a specific cover letter. In the next section, we describe these 'treatment' letters and provide quantitative estimates of the extent to which they capture variation on our conceptual dimensions of 'appeal', 'complexity', and 'tone'. We then present the results of our experiment, providing a statistical analysis of variation in response rates across treatment groups, before concluding by drawing out the consequences of this study for practitioners engaged in online surveying.

Email 'Cover Letter' Messages

In our research design, we introduce three dimensions of letter variance: appeal (altruistic versus egoistic); complexity (complex versus simple); and tone (formal versus informal). Combining all three dimensions generates 8 letter types (2 x 2 x 2)[1]: altruistic-

simple-informal (ASI), altruistic-simple-formal (ASF), altruistic-complex-informal (ACI), altruistic-complex-formal (ACF), egoistic-simple-informal (ESI), egoistic-simple-formal (ESF), egoistic-complex-informal (ECI), egoistic-complex-formal (ECF). We discuss each dimension below. Each of these letters is presented in Dutch and English in Web Appendix 1 of this article.

Dillman (2007) contends that the interaction that takes place between a surveyor and a survey respondent is best conceptualized as a social exchange – his approach leads us to focus on the motivations of respondents, and to treat respondents as intelligent social beings – meaning that survey researchers must maximize those elements of social reward that will lead respondents to positively evaluate participating in the survey. However, there are different types of social reward for participation that can be emphasized. Hansen's (1980) 'self perception' model of survey response indicates that survey requests can encourage response by associating survey completion with either personal or social rewards. The former appeals can be considered 'egoistic' (appealing to the respondents' sense of self) and the latter 'altruistic' (appealing to respondents' sense of social obligation) (Redline et al., 2004).

We therefore seek to weave a specific appeal into the text of the letters. These appeals emphasize either intangible personal benefits that come from expressing one's opinions (egoistic), or the benefit that the research represents to society as a whole (altruistic). The 'egoistic' letters focus on the worth of the respondent as an individual, emphasizing how important, reliable and valuable the respondents' opinion is. The altruistic letters, on the other hand, build on the idea of reciprocity, emphasizing the contribution to research and society being achieved through responding to the survey.

For egoistic messages, we employed a vocabulary that emphasized words such as "you", "your", "opinion", whereas for altruistic messages words as "contribute", "contribution", "help". Of course, all of these framing efforts take place within the

constraints that the email is comprehensible, communicates the topic of the survey, and asks politely for cooperation: therefore, for instance, the word "help" was not completely dropped from egoistic messages. This manipulation is displayed in quantitative terms through word frequencies in Web Appendix 2. Furthermore, we carried out a Wordscores analysis (Laver, Benoit & Garry, 2003) on the letters to investigate how they align on an altruistic-egoistic dimension. As presented in Web Appendix 3, all the letters employing an egoistic appeal are substantively and statistically different from the altruistic emails, in the expected ordering.

The second dimension of variance that we analyze is the linguistic complexity of the survey proposition, which, we argue, can act as a proxy for the cost of completion to the respondent. We posit that complex language patterns in the cover letter may serve to increase the perceived cost of completion, and consequently depress cooperation rates. Simple messages, on the other hand should minimize the cost perception of respondents, and improve cooperation rates. We therefore divide email messages into simple and complex formulations. Simple messages were written in words with small numbers of syllables, and avoid multi-clause sentence structures. Complex formulations employed longer wording and complex sentence structures. Again, to maintain realism – the simple formulations were not childishly simple and the complex formulation was not impenetrably complex.

As such, integrating this design element into letter composition involved a degree of subjective creativity, however we were able to examine the extent to which 'complex' letters differ using a computer algorithm designed to distinguish textual complexity. The Flesch-Kincaid readability scores displayed in Web Appendix 4 confirm the extent of this manipulation.

Thirdly, we seek to manipulate the tone of the email cover letter. It is difficult to predict the effects of letter tone on response rates *a priori*. On the one hand, a formal tone conveys legitimacy and authority. For instance, Brennan (1992) found that cover letters

signed by researchers whose title designated high status on the research team generated higher completion rates than cover letters signed by low-ranking researchers. On the other hand, a friendly tone can establish a positive and trusting communication stream. It seems most likely that respondents' interpretation of tone is a result of societal or personal factors – some people may place greater trust in formal letters others in informal letters.

The Dutch language has separate formulations for "You" (formal) and "you" (informal), essentially covering this dimension perfectly. However, to make sure that the letters capture substantively different tones, we also altered the opening and closing sections of the letters. For informal messages, we modified the first sentence, so that the Kieskompas.nl Director introduces himself by name (and using formulations such as "Hi" or "Greetings") to induce a more personal, informal, and closer atmosphere. Furthermore, in the closing lines we used "Kind regards" in the informal messages, instead of "Yours sincerely" in the formal messages – followed by signature in both cases.

Research Design

Our design uses a panel of respondents who voluntarily left an email address and indicated consent for being re-contacted after completing a Dutch online vote advice application: Kieskompas.nl. This approach suggests a possible limitation of the generalisability of our study due to respondent self-selection. A further complication stems from the fact that several members of this panel were previously re-contacted for political surveys designed by Kieskompas and implemented by the public opinion agency Synovate. Accordingly, individuals who were interested enough to previously express their opinions and further help social scientific research make up our full database. This clearly shows that they are, on average, a more politically interested, motivated, and active segment of the

general population. However, this aspect of our sample also works against us in a rather peculiar way: it suggests that we should not anticipate that email content has a large impact on cooperation rates or response quality, since members of the panel have already had experience with surveys and they are obviously interested in the political arena. Nevertheless, as we will see below, there is evidence that letter contents had significant effects on our indicators of concern.

The pooled dataset had 11374 respondents. These respondents can be grouped into three categories that are relevant for our study: (1) 4901 respondents who had not yet been re-contacted by Kieskompas and Synovate, (2) 1812 respondents who had been re-contacted once already, and (3) 4661 respondents who had been re contacted twice already. This categorization is important because depending on the frequency of previous collaboration we may expect different response behavior. The two previous survey waves had elicited the following cooperation rates: the first wave (sent to respondents from category 3 above) had a 62% cooperation rate, while the second wave (sent to categories 3 and 2) elicited at 52% cooperation rate. Both waves were implemented very close to the panel sign-up that took place during the Dutch election campaign in May and June 2010. The 4901 respondents who had not been re-contacted at the start of the experiment left their emails on the Kieskompas.nl local elections websites in March 2010.

We divided our respondents into 8 groups using block randomization to assign individuals to these groups. We chose this method because we wanted to minimize the between-group variation for three dimensions: gender, education, and previous contacts[2].

The survey concerned coalition formation following the Dutch national elections, and was sent to respondents between the 12th and 22nd of December 2011. All letters indicated clearly that this survey is about coalition formation and the Dutch government. One limitation of our experiment stems from the fact that we cannot differentiate between people

who read the cover letter and decided not to participate and those who did not open the email request at all. It may thus be the case that some of the observed variation is explained by variation in the subject lines of our emails, rather than their content[3]. Due to technical and privacy issues, we cannot assess whether respondents read through the whole cover letter, or just clicked the link to our survey after reading the first couple of lines. A final difficulty is that our design did not include a check on the perception of the manipulations by our respondents, for example their perceptions of message complexity, and we are reliant on our textual analysis of the various cover letters described in the previous section to be confident that the manipulations are valid.

Results

On average, altruistic appeals generated higher cooperation rates than egoistic appeals, and these differences are statistically significant, as shown in Table 1 and Table 2. Altruistic appeals register 4% higher cooperation rates on average, compared to egoistic messages. Complex messages perform badly across the board. If complex appeals are paired with an altruistic appeal the situation is not as grim, but cooperation rates are still low. The egoistic-complex-informal message has the lowest cooperation rate, 15%, which is also statistically significantly lower than the rates for any other group. By further analyzing separate batches of the dimensions in Table 2, we see that linguistically-simple messages have an average 29% cooperation rate, whereas complex messages average only 21% ($p < .001$). The difference between formal and informal messages is minuscule and not significant, thus we cannot tell with certainty which one fairs better – a finding that chimes with the theoretical ambiguity surrounding the effects of letter tone discussed above.

[**Table 1** and **Table 2** around here]

Additionally, the groups all differed significantly from the overall population in terms of previous contacts. This translates into significantly higher cooperation rates among survey rookies compared to those already re-contacted once or twice (Column 4 in Table 1, with the exception of ACI). These results suggest that for the present survey the overall decrease in cooperation rates (compared to previous waves using the same panel) stems from the loss of individuals who had already participated in two re-contact surveys administered by Kieskompas, suggesting a sort of survey participation *apathy* or *saturation*. For this latter group, we find no systematic difference between our treatments. After breaking down the cooperation rates to different sub-categories we find identical general patterns for our treatments and the significant treatment effects discussed previously are present for the survey rookies, simple messages assuring highest cooperation rates.

Discussion

Given the properties of the survey and research design employed, these findings are not to be generalized outside of the online and opt-in survey framework. However, we would argue that further studies using a randomly drawn group may in fact find stronger cover letter/email effects, because our pool of respondents are clearly interested and informed about politics, making it difficult to find major treatment effects. Because we find significant and substantive effects on cooperation rates or response quality even in this context, we strongly believe that these suggest that the formulation of online cover letters can play a significant role in response rates for online surveys.

Contact requests play a particularly important role in online surveys – as the respondent is typically asked to complete the survey via a link embedded within the text of these emails. As online modes become more common in survey administration (Couper,

2011), understanding such effects will become increasingly important in the study of the relationship between the survey implementation process and overall survey error. The research presented here has sought to problematize and operationalize several key elements of the survey contact request – focusing on tone, complexity, and appeal type.

There is evidence here that email letters' contents can substantially influence cooperation rates. The most evident pattern arising from our analysis suggests that overly complex language patterns are damaging to cooperation rates. We would argue that the mechanism here is that the linguistic complexity of the appeal acts as a signal to respondents, indicating the likely difficulty of completing the survey. Complex language in the cover letter, signaling a potentially difficult/costly experience, appears likely to depress response rates. We also present evidence that altruistic appeal messages bring slightly higher cooperation rates than egoistic appeal messages. These findings are in line with results reported by Gendall, Hoek & Esslemenont (1995) on postal mail cover letters. We did not find any systematic effects of email tone on co-operation.

From a practical perspective, a tentative conclusion is that cover letters for online surveys should strive to use linguistically simple formulations and to appeal to respondents' altruistic motivations by focusing on the societal benefits of knowledge arising from their response. Furthermore, we have demonstrated that these aspects of cover letters can be quantified and analyzed – allowing for systematic record keeping and, ultimately, manipulation of this aspect of survey research by practitioners.

We also found that all of the messages contained in our cover letters fair best in attracting relative newcomers, and they all do a relatively poor job in convincing individuals who were previously re-contacted. Overall, we found that those who participated in only one previous survey (first re-contact) had significantly higher cooperation rates. However, this pattern does not vary across treatments, having an overly newcomer sample in all cases. This

points to a limitation of the potential impact of cover-letter communication for eliciting higher response-rates in online surveys – suggesting that the impact of such communication is greatest when respondents are first being contacted via email. For those respondents who have already completed previous surveys in response to online contacts from a given agency, other strategies may be necessary to combat survey fatigue.

In conclusion, we believe this research represents an early step in understanding the importance of cover-letter communication effects for online surveys and panels, and at this point we still have to consider the possibility that different national cultures may result in varying responses to the treatments described in this paper. However, the results described here indicate that varying the appeal, linguistic complexity and tone of online 'cover letters' is a fruitful avenue for further research in establishing and validating practices that assure good cooperation rates.

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Footnotes

[1] In order to save space, from now on, we will use the abbreviations from the parentheses.

[2] Our benchmark was the composition of our pooled set of respondents. There are no major differences across the 8 groups in terms of composition on the covariates we used as blocks; moreover none of these statistically significant, and hence our experimental groups are balanced for these dimensions. For example, the proportion of women ranges of 36% to 39% and the average number of previous re-contacts ranges from 0.98 to 0.99 across experimental groups. Group sizes are between 1415 and 1431. These descriptive statistics are not reported here, but are available upon request from the authors.

[3] As noted in the review process, the fact that the 'complex' formulations mention the survey topic in the subject line, while the 'simple' formulations do not mean that, in this regard, the content of messages (as well as communicative styles) differed systematically.

List of Tables and Figures

Table1

Summary table of cooperation rates

Letter		Cooperation rate (with 95% CI)				Sample size/Original sample
		Full sample	No re-contact	One re-contact	Two re-contacts	
Altruistic-complex-formal	ACF	0.24 (0.22, 0.26)	0.38 (0.34, 0.42)	0.30 (0.24, 0.37)	0.06 (0.04, 0.08)	337/1419
Altruistic-complex-informal	ACI	0.25 (0.22, 0.27)	0.42 (0.38, 0.46)	0.26 (0.20, 0.32)	0.06 (0.04, 0.09)	350/1419
Altruistic-simple-formal	ASF	0.29 (0.26, 0.31)	0.46 (0.42, 0.50)	0.31 (0.25, 0.37)	0.10 (0.08, 0.13)	410/1418
Altruistic-simple-informal	ASI	0.3 (0.28, 0.32)	0.54 (0.50, 0.58)	0.29 (0.23, 0.35)	0.06 (0.04, 0.08)	427/1415
Egoistic-complex-formal	ECF	0.22 (0.2, 0.24)	0.40 (0.36, 0.44)	0.21 (0.16, 0.27)	0.03 (0.02, 0.05)	315/1431
Egoistic -complex-informal	ECI	0.15 (0.13, 0.17)	0.25 (0.22, 0.28)	0.15 (0.11, 0.21)	0.04 (0.02, 0.06)	208/1416
Egoistic -simple-formal	ESF	0.27 (0.25, 0.30)	0.49 (0.45, 0.53)	0.27 (0.21, 0.33)	0.05 (0.04, 0.08)	389/1418
Egoistic -simple-informal	ESI	0.29 (0.26, 0.31)	0.48 (0.44, 0.52)	0.32 (0.26, 0.39)	0.07 (0.05, 0.10)	407/1418

Table 2

Summary table of cooperation rates for different groups

Letter groups	Cooperation rate (with 95% CI)	
Appeal	*Egoistic*	*Altruistic*
	0.23 (0.22, 0.24)	**0.27 (0.26, 0.28)**
Complexity	*Simple*	*Complex*
	0.29 (0.28, 0.3)	**0.21 (0.20, 0.22)**
Tone	*Informal*	*Formal*
	0.25 (0.23, 0.26)	0.26 (0.24, 0.27)

Note: Statistically significant differences ($p < .05$) in cooperation rates for each dimension are bolded.