When Is a Creationist Not a Creationist?
Appreciating the Miracles of Public Opinion Polling

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Abstract: This research report re-examines the claim made by the National Post newspaper just prior to the 2000 Canadian election that Canadians are split virtually down the middle on the merits of creationism versus evolution. Based on new data collected for the purpose, the authors argue that the original research likely overestimates the proportion of the population subscribing to creationist views. Moreover, they suggest that the nature of the question asked in the original research accounts for this overestimation. Finally, they argue that the increasing use of public polls for advocacy as well as descriptive purposes makes it imperative that the media and the public become more sophisticated in their appreciation of how the medium can affect the message.

Résumé : Ce rapport de recherche examine à nouveau l’affirmation faite par le quotidien National Post juste avant les élections canadiennes de l’an 2000, à savoir que la moitié des Canadien-ne-s croient au créationnisme, l’autre moitié croyant à l’évolutionnisme. Les auteurs, se fondant sur des données recueillies pour vérifier cette affirmation, soutiennent que la recherche originale surestime la proportion de la population croyant au créationnisme. En outre, ils suggèrent que cette surestimation s’explique par la manière dont on a formulé la question dans la recherche originale. Finalement, les auteurs soutiennent que l’utilisation croissante de sondages pour la promotion de causes de même que pour des buts de description souligne l’importance de faire en sorte que les médias et le public aient une meilleure compréhension de l’impact des médias sur les messages communiqués par ces derniers.

Keywords: Newspapers; Research methods

In a front-page article published two days before the Canadian federal election of November 27, 2000, the National Post reported that “[c]reationism . . . is supported by about as many Canadians as those who favour evolution” (Owens,
Based on a poll of 512 Canadians undertaken for the paper by COMPAS Research Inc., the article stated that, although about a fifth of the sample (19%) was not prepared to advance an opinion on the subject, those who did offer a position split almost evenly, with only a slight edge (53%-47%) to the evolutionist or non-creationist position. Although not reported in the news article, the research indicated as well that, among Alliance supporters and among Ontarians, creationism was actually the prevailing position (53%-47% and 51%-49%, respectively), while Liberal supporters who held a position were split down the middle (50% for, 50% against).

There is little wonder that the story received front-page treatment. The media has usually regarded creationism as a marginalized belief system espoused by a small minority of religious conservatives in this country. Indeed, Stockwell Day, the leader of the Canadian Alliance Party and the Post’s preferred candidate for prime minister, had been held up to ridicule during the campaign for espousing creationist beliefs. Scholarly research on the prevalence of creationist thinking in Canada has been scant, but what exists has tended to reinforce the media’s view. For example, Bibby’s research (1982) has suggested that, at best, only about one in five Canadians subscribes to a traditional version of Christianity—a version that does not even require the creationist’s stringent belief in the veracity of the Bible.

Finally, the COMPAS finding is noteworthy because it suggests by implication that Canada has come to resemble closely the United States in this regard (see Gallup Poll Releases, 1999)—a country with a much higher rate of church affiliation and church attendance, a country with a religious right that is much stronger in numerical and political terms, and a country where creationists are currently waging a high-profile campaign to undermine the teaching of evolution in U.S. public schools.

What should we make of this finding? In the pages that follow, we make two points. The first is that methodological weaknesses of this research raise serious doubts about its usefulness for describing the Canadian population. The second is that, given that the polling industry is not regulated in any effective fashion, the media (and the public) must adopt a more skeptical stance when presented with poll results that appear to serve a political agenda.

It is our view that the methodology associated with these Canadian findings provides a possible explanation for their anomalous character. The question posed by the COMPAS interviewers was the following:

Turning to one final topic, religion, as you know some people believe in the theory of evolution to explain the origins of life while other people believe in a Biblical understanding of creation. Which viewpoint is closer to your own? (COMPAS Research Inc., 2000)

While it is always dangerous to use a single question to measure a complex idea, this COMPAS question would seem to have a number of additional difficulties associated with it. Most obviously, the question’s two response options are not necessarily contradictory. The first option, the theory of evolution, applies to the changing features of a given species over time and does not address the ultimate
source of life. The second option, the Biblical understanding of creation, refers to the causes of life’s beginnings and does not explicitly address issues such as species development over time. As a consequence, only those who subscribe to a strictly literal interpretation of the Bible would find this choice meaningful. All others are being asked to respond to a question that is at best ambiguous, but more likely frustrating (for example, to Christians who subscribe to a figurative or metaphoric interpretation of the Bible), or irrelevant (for example, to non-Christians who subscribe to another non-Biblical understanding of creation).

Research has demonstrated that respondents generally co-operate with interviewers even when asked vague, ambiguous, or nonsensical questions and even if they have given little prior thought to the issue in question (Asher, 2001; Schuman & Presser, 1981). Responses to questions of this kind are not meaningless, but they are especially susceptible to response effects—systematic variance as a function of the way the question is asked. Priming and framing effects are among the most well documented of these response effects (Kinder & Sanders, 1990; Nelson & Oxley, 1999). Such effects are created when the words or phrases used in a question provide the respondent with cues (or clues) as to which considerations should or might inform a response. As Zaller & Feldman suggest in their treatise on the subject, “[S]urvey questions do not simply measure public opinion. They also shape and channel it by the manner in which they frame issues, order the alternatives, and otherwise set the context of the question” (1992, p. 582).

This thinking may have relevance for understanding the results obtained with the COMPAS/National Post survey. In the case of this COMPAS item, the wording explicitly cues respondents that this is a question about their religion rather than, say, their belief in science; it then makes only vague and ambiguous reference to the substance of the religious beliefs that analysts later label the creationist option. Given the item construction, then, there is a reasonable possibility that at least some of the respondents who chose the Biblical understanding option are not creationists as the term is conventionally used.

To explore this issue further and to illustrate the way in which design choices can influence response distributions, we conducted a study that used the original COMPAS survey question, but which addressed respondents’ beliefs in creationism in several more direct ways as well. For the study, we used an introductory political science class comprised of 288 first-year students at Wilfrid Laurier University. First-year students living in the City of Waterloo are unlikely to be representative of the Canadian population; however, they are useful to compare the implications of using one measure of creationist thought rather than another to estimate the prevalence of that thought within a given population.

The student sample was asked to complete a 10-minute self-administered questionnaire in class. Early in the questionnaire, we conducted a split-ballot experiment by giving respondents either of two measures of creationism. The first was the COMPAS question as reproduced above; the other question was worded as follows:
As you know, people have different beliefs regarding the origins of life. Some people believe in creationism, a literal belief in the Bible’s account of creation. Others believe that while God might be the creator of life, the account of creation in the Bible tells us very little about the real origins of life. Check the interval on the scale below that best reflects your view of the matter.

It should be evident that this question is quite different from the COMPAS one. It explicitly identifies creationism as the focus of the question, provides a more specific summary of that position, and asks respondents to indicate the degree to which they subscribe to the Bible’s literal account of creation. That is, it asks for a judgment on one dimension only: the Bible’s usefulness as a source of information about the origins of life.

The results of this initial probing of the sample are presented in Table 1. It can be seen from the table that the two questions create significantly different profiles of the student sample on the question of creationism. While about a third of the students who were asked the COMPAS question endorsed the Biblical account of creation at least weakly, that proportion drops to about a quarter in Version 2, where the question explicitly mentions creationism and describes it as a literal belief in the Bible’s account of creation.

| Table 1: Endorsement of Creationist Position Given Two Different Question Versions |
|------------------------------------------|------------------------------------------|
| Version 1 COMPAS Creationist Question | Version 2 Alternative Creationist Question |
| Strong Creationist Position (a “1” on the 5-point scale) | 20% | 7% |
| Weak Creationist Position (a “2” on the 5-point scale) | 12 | 17 |
| Don’t Know (a “3” on the 5-point scale) | 22 | 26 |
| Weak Non-Creationist Position (a “4” on the 5-point scale) | 19 | 14 |
| Strong Non-Creationist Position (a “5” on the 5-point scale) | 28 | 36 |
| 100% (160) | 100% (115) |

Note: Chi square=12.14, df=4, p<.02. For both questions, respondents were given a 5-interval scale with the alternatives summarized at each pole and Don’t Know centred under the middle interval.

When respondents indicate that they subscribe to a Biblical account of creation, whether literal (Version 2) or not (Version 1), do they appreciate the implications of that account? To explore this issue, we asked two additional questions of all respondents toward the end of the questionnaire. The first dealt with their belief about the age of the earth and asked whether they believed the Biblical account that the earth was closer to 6,000 years old or science’s account that it was closer to 4.5 billion years old⁴ and the second asked about the development of the
human species—whether humans had or had not changed significantly from their original form.5

Table 2 displays the distribution of the sample for each of these questions. This table suggests that the proportion of the sample that subscribes to key features of the Biblical account is much smaller than the proportion subscribing generally to the Biblical account. Indeed, fewer than half of the creationists identified by the COMPAS question endorsed these more specific creationist positions; and even the more direct Version 2 of the question significantly overestimates (by a factor of about 2) the number of respondents who are prepared to endorse these key Creationist tenets.

Table 2: Distribution of Student Opinions Regarding the Age of the Earth and the Development of the Human Species

<table>
<thead>
<tr>
<th></th>
<th>Approximate Age of the Earth</th>
<th>Development of Human Species</th>
</tr>
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<tbody>
<tr>
<td>Strong Endorsement of the Creationist Position (an A1&quot; on the 5-point scale)</td>
<td>7%</td>
<td>5%</td>
</tr>
<tr>
<td>Weak Endorsement of the Creationist Position (an A2&quot; on the 5-point scale)</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Don’t Know (an A3&quot; on the 5-point scale)</td>
<td>21</td>
<td>12</td>
</tr>
<tr>
<td>Weak Endorsement of the Scientific Position (an A4&quot; on the 5-point scale)</td>
<td>15</td>
<td>26</td>
</tr>
<tr>
<td>Strong Endorsement of the Scientific Position (an A5&quot; on the 5-point scale)</td>
<td>52</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
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<td>(280)</td>
<td>(280)</td>
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Note: For both questions, respondents were given a 5-interval scale with the alternatives summarized at each pole and Don’t Know centred under the middle interval.

What does this suggest about the nature of public opinion on this question? First, it should be a reminder that convenient labels common in elite discourse may well be misleading when applied to the population at large, especially when the label is assigned on the basis of responses to vaguely worded questions. Political scientists have known for decades that very few people possess political belief systems or ideologies that are well articulated, internally consistent, and that answer reliably to conventional labels such as left or right, conservative or liberal (Converse, 1964; Lambert, Curtis, Brown, & Kay, 1986). Bibby (1987) makes a similar case for religion in Canada, describing the public’s grasp of religion as fragmented.

The pattern of findings here is consistent with this assumption. It is likely that many people have not developed internally consistent belief systems or ideologies that comfortably accommodate such disparate parts of their life as their religious convictions and their belief in science. Because most people with a Judeo-Christian background subscribe at least in part to both the veracity of the scientific par-
adigm and the significance of the Bible as something more than a cultural myth, asking them to choose between the competing claims of each in the same context is likely to produce unreliable responses and ones highly susceptible to question form. The less specific the question, the more unreliable the response; the more the question cues the respondent to consider the topic in one context rather than the other, the more responses will be skewed in that direction.

Evidence for this account can be found in the research reported here. It is apparent in the significantly different profiles that emerge from our split-ballot experiment using different questions—the more specific of the two versions yields a smaller estimate of belief in creationism. It is apparent as well in the willingness of significant proportions of students to endorse the creationist option at the general level but to reject that option in its particulars. Finally, it is apparent in the level of ambivalence in responses to these questions. For the most part, respondents—whether from the student population or the general population—provide opinions when asked. Usually, fewer than 10% of national or student samples offer a Don’t Know response to opinion items on topical issues, and this was the case for other items in both the COMPAS and student questionnaires. Yet the level of non-commitment for this particular issue is at least twice that proportion in both studies.

Certainly, this research should serve to reinforce skepticism about the original COMPAS finding on the prevalence of creationism within the Canadian public. Although the research does not allow us to make a reliable estimate of Canadians’ feelings on this question, as it was based on a university student sample rather than a national sample, it does strongly suggest that the COMPAS/National Post question yields estimates of creationist thinking that are considerably larger than those produced by a clearer question. Further evidence for this conclusion can be found in the 2000 Canadian Election Study data that were collected within several months of the COMPAS poll. In that national sample, only about 18% of the 1,534 respondents agreed or agreed strongly with the statement that the Bible is the actual word of God and is to be taken literally word for word.6

However, there is a larger issue here as well. Opinion polls in recent years have assumed almost universal status as proxies for public opinion in the policy process. They are assumed to be descriptive tools for mapping public preferences and perhaps for estimating the public’s tolerance and acceptance of policy initiatives. The research reported above underscores what many have documented before: pollsters’ descriptions of the public are heavily dependent on the questions asked. This creates problems enough even if we assume that pollsters’ primary motivation is to develop an accurate description of the public’s feeling on a topic. But it looms as a major problem for both the polling industry and the consuming public when advocacy rather than description becomes a possible objective of the exercise. Advocacy polls are ones sponsored by interested parties, both public and private, with the object to persuade policymakers, and perhaps the public itself, that the electorate shares their particular perspective (Asher, 2001; Robinson, 2002). Because the polling industry is not regulated in any effective fashion and
sees no conflict of interest in allowing sponsors a role in designing their instruments, the potential for abuse here is enormous.\textsuperscript{7}

It would be impossible to determine if the COMPAS poll was designed primarily with advocacy or descriptive objectives in mind. While it was a sponsored poll, and the sponsor in question had endorsed a political candidate who espoused creationist views, pollsters also inadvertently pose poorly worded questions at times. However, whether advocacy was the purpose or not in this case does not really matter. Because the industry has no standards around the practice of advocacy polling, each case of a sponsored poll must be scrutinized carefully for the possibility that it was designed specifically to advance a particular agenda. That responsibility must fall to the media or, where the media is the sponsor, to the public. Both must become more sophisticated in their appreciation of how the medium can affect the message.

This is certainly not a new proposal (Ladd, 1980; Paletz et al., 1980), but it apparently bears repeating. Media outlets routinely report sampling frames, sample sizes, and confidence intervals when presenting poll results, but they are inconsistent in providing actual question wordings, and they seldom subject to critical scrutiny the \textit{substance} of the polls or the \textit{claims} made about them by their authors. As with any empirical claims reported by the mass media, poll results should be cross-checked with expert opinion and evaluated for the biases that they may contain. Media-sponsored polls should be held to the same standard by the public. When weak research is reported without challenge or comment, the short-term implication is that the public is misinformed.\textsuperscript{8} However, in the longer term, it is the credibility of both the polling industry and the media that use them that is at stake.

\textbf{Acknowledgments}

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\textbf{Notes}

1. The \textit{National Post} article was based on a COMPAS report entitled \textit{Hot Button Issues} that can be found on the COMPAS Web site, http://www.compas.ca/ [November 25, 2000].

2. An example of typical media treatment of creationist arguments can be found in the Associated Press’ capsule summary of the 2000 Canadian general election contest, http://wildcat.arizona.edu/papers/94/68/01_92_m.html.

3. In his research, Bibby (1982, p. 11) defined Traditional Christianity as involving (1) belief in the existence of God, (2) belief in the divinity of Jesus, (3) belief in life after death, (4) engaging in prayer at least sometimes, (5) having experienced the presence of God, and (6) displaying a rudimentary grasp of the Bible’s story.

4. The wording of the question was: “Regarding the age of the earth, some people have a Biblical understanding of the earth’s development and believe that it is approximately 6,000 years old. Other people believe science’s account that the earth is approximately 4.5 billion years old. On the scale below, check the interval that best reflects your view.”

5. The wording of the question was: “Regarding the origin of the human species, some people believe that human beings as we know them today are more or less identical to the species in its
original form. Other people believe that human beings of today evolved considerably from early
cavemen and are quite different from their original form. On the scale below, check the interval
that best reflects your view."

6. This question was asked in the Mailback Questionnaire of the 2000 Canadian Election Study. The
Mailback Questionnaire was completed by 1,534 of the study’s respondents. The Canadian Elec-
tion Study was conducted by André Blais, Elisabeth Gidengil, Neil Neaville, and Richard Nadeau,
and was funded by the Social Sciences and Humanities Research Council of Canada. Other details
about the methodology of the study can be found on the study’s Web site, http://www.fas.umont-
real.ca/pol/ces-eei/index.html.

7. The polling industry in North America is self-regulating. However, there are no industry standards
regarding question wording of which a member organization might be found in violation. Both the
Canadian and the U.S. industry organizations do require full disclosure of question wordings, but
leave it to the public marketplace to determine standards of acceptability. Recent cases in which
the polling industry has acknowledged ethical violations have focused on a pollster’s failure to dis-
close sufficient information about the questions. See, for example, Krosnick (1989) or the Web
site of the AAPOR, the American Association of Public Opinion Research, http://www.aapor.org/
ethics/.

8. Some might argue that results like those reported by the Post about creationism are so obviously
lacking in credibility as to require no response or rebuttal. Unfortunately, and especially where
there is a political agenda involved, such findings persist in public lore. For example, two years
after they first appeared, these creationist findings resurfaced on the CBC television show Sunday
(March 17, 2002), when a Calgary print reporter cited them in support of her argument that the
CBC has treated Stockwell Day unfairly.

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