Research Note on
Progress Indicators in Online Surveys

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Purpose of this Note

In spring 2003, I conducted a split-form online survey for my Master thesis in Communication Science, which had to be submitted in German. Among other factors, I tested the influence of the presence and precision of a progress indicator on the dropout rate and self-reported satisfaction with the survey. It seems like I was the first to systematically vary the precision of the indicator. Meanwhile this factor attracted the interest of other researchers and I keep receiving requests for an English summary of my main results. This is why I started to write this research note. Active researchers in the field are welcome to request further details and I will try to update this note accordingly.

Experimental Setup

Between April 28th and May 18th 2003, $N_0 = 968$ participants started an online survey on the introduction of college tuition at German public universities, a controversial topic at the time. The participants were solicited with the n-th visit method from a population of about $840\,000$ visits of the then leading nation-wide student website in Germany (`http://www.hausarbeiten.de`). Altogether $39\,755$ subjects ($4.7\,\%$, $n \approx 20$) received the invitation to participate in the survey (see Fig. 3), $N_0 = 968$ ($2.5\,\%$) started the survey and $N_1 = 577$ ($59\,\%$) went through all 44 questions. About $10\,\%$ of N_1 were lurkers and $34\,\%$ had zero item-nonresponse. No filters were used to keep the length of the survey constant for all participants. Several technical mechanisms were installed to detect and prevent multiple participations from the same browser or IP address.

The sample was not representative for the German Internet population at that time. For example, the modal age group is 20–29 years with $62\,\%$ in our sample versus $20\,\%$ in a representative survey of German online users in 2003. $67\,\%$ of our respondents reported to be female (versus $41\,\%$ in the respective online population). Overall $78\,\%$ of the respondents said they have used the Internet for more than two years (versus $42\,\%$).
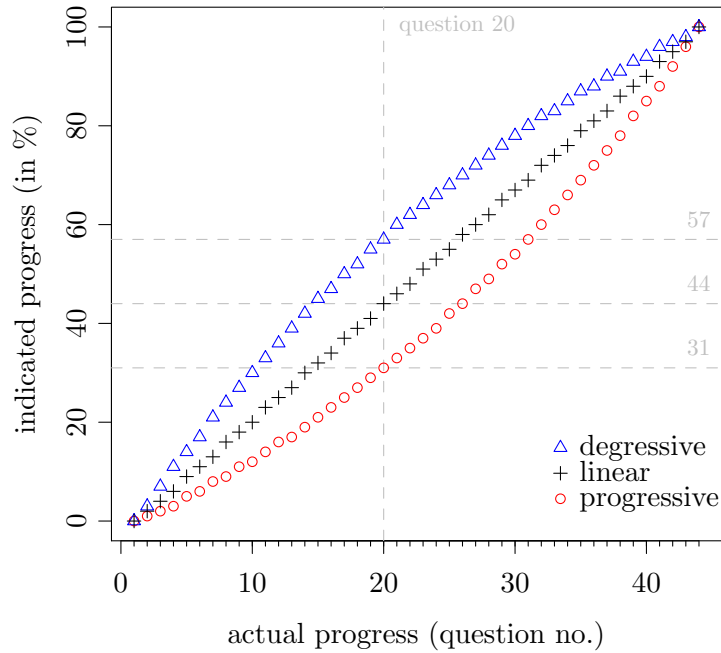
Figure 1: Non-linearity of progress indicator

The survey was administrated in a $2 \times 2 \times \mathbf{4}$ randomized experimental design (not counting randomized responses orders) to study effects of various motivating elements on completion rates and response behavior. The four conditions refer to four variants of the progress bar indicator shown on each page of a one-question-per-screen design:

1. no indicator (control)

2. progressive (i.e., slow-then-fast) progress bar,

3. linear (i.e., objective) progress bar, and

4. degressive (i.e., fast-then-slow) progress bar.

Great care has been taken to avoid that the progress indicator is confounded with the download volume (an apparent problem of previous studies) or any other attributes of the client system (e.g., browser). The download volume was constant at 164 KB for the entire survey. Figure 1 reports the deviation of the progress indicator from the actual progress in conditions 2 and 4. Figure 2 shows a screenshot of a typical questions with the progress indicator in the top-right corner. It consisted of a graphical bar and a numerical progress information in percent.

Results

	condition			
	control (no indicator)	progressive (slow-then-fast)	linear (objective)	degressive (fast-then-slow)
All questionnaires ($N_0 = 968$)				
cases	262	213	249	244
drop-outs	109	96	99	87
drop-outs (%)	41.6	45.1	39.8	35.7
Complete questionnaires ($N_1 = 577$)				
cases	153	117	150	157
median response time (seconds)	537	560	529	500
75 %-quantile response time	660	672	668	619
Self-reported satisfaction with the questionnaire (questions 40–43, means of 5-point rating scales)				
boring (1) – (5) motivating	3.3	3.5	3.5	3.5
not difficult (1) – (5) very difficult	1.9	1.9	1.9	1.9
not usable (1) – (5) very usable	4.1	4.3	4.3	4.2
bad topic (1) – (5) interesting topic	4.2	4.3	4.3	4.1
Drop-outs ($N_1 = 391$)				
cases	109	96	99	87
median response time (seconds)	59	64	67	77
75 %-quantile response time	207	222	230	188
median drop-out question	4	6	6	5
25 %-quantile drop-out question	1	3	2	2
75 %-quantile drop-out question	18	18	18	14

How to Cite

Please cite my original Master thesis as follows:

Böhme, R. (2003). *Fragebogeneffekte bei Online-Befragungen* [Questionnaire effects in online surveys]. Master Thesis, Technische Universität Dresden.

Selected results have also been presented in a talk at the GOR 2004 conference:

Böhme, R. (2004). The Effect of Motivating Elements in Online Surveys. In: German Online Research (GOR) Conference, Duisburg, March 31st. `http://www1.inf.tu-dresden.de/~rb21/publications/Boehme2004_OnlineSurveys_GOR.pdf`.
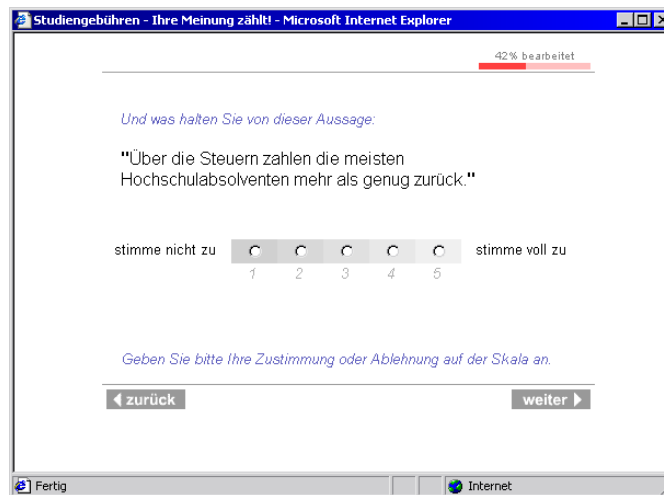
Figure 2: Screenshot of question no. 25

Figure 3: Random intercept pop-up (original text over website design of spring 2003)