Biased Search Rankings Can Shift Opinions on a Wide Range of Topics

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**Abstract:** A recent series of experiments published in the *Proceedings of the National Academy of Sciences* showed that search engine results favoring one candidate can (a) shift the preferences of undecided voters toward that candidate by up to 80% in some demographic groups and (b) be masked so people show no awareness of the manipulation. We labeled this phenomenon the Search Engine Manipulation Effect (SEME), and it appears to be one of the largest behavioral effects ever discovered. Our previous experiments have focused on shifts in voting preferences. In three new experiments with a total of 900 U.S. residents (mean age = 33.2), we sought to determine whether biased search rankings could also shift people’s opinions on a wide range of topics. Each of the new experiments looked at a different topic, and participants were pre-screened to make sure they didn’t have strong opinions about these topics. The topics were: Is artificial intelligence useful or dangerous? Are people born gay or do they choose to be gay? And: Is fracking helpful or dangerous? All subjects were first asked various demographic questions, then shown brief summaries of the “pro” and “anti” views on each topic, and then asked their opinions about each topic. Next, subjects were allowed to conduct an online search using our mock search engine (Kadoodle) lasting up to 15 minutes. All search results were real and linked to real web pages; only the order of search results varied from group to group. In each experiment, one-third of the subjects saw biased search results favoring one perspective; one-third saw biased search results favoring the opposing perspective; and one-third (the control group) saw mixed search results. After completing their search, subjects were again asked for their opinions about the topic. Our primary dependent variable was Manipulation Power (MP), the overall increase in the proportion of subjects favoring one viewpoint after having viewed search rankings favoring that viewpoint. The MPs in the three experiments were 28.0%, 13.2%, and 37.0%, respectively. Corresponding shifts were also found for how persuasive subjects found each viewpoint to be and for how much they trusted each viewpoint. We conclude that biased search rankings can impact more than voting preferences; specifically, it appears that search rankings favoring one viewpoint on a wide range of topics can cause people who have not yet formulated a strong opinion on such topics to adopt the favored perspective.