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Is That Even Checkable? An Experimental Study in Identifying Checkable Statements in Political Discourse

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The first step in journalistic fact-checking of political discourse is identifying whether statements contain "checkable facts" (i.e., not opinions). This randomized controlled experiment investigated how different demographic factors (age, gender, education, profession, and political affiliation) are associated with the ability to discern if statements contained checkable or noncheckable facts, as well as what impact training in identifying checkable facts can have on overall outcomes. A total of 3,357 participants identified checkable and noncheckable statements from a fictional political speech extract containing eight statements. Overall, participants were able to correctly identify an average of 69% of statements. Specific demographic factors (being male, young, and university educated) were positively associated with increased performance as well as working in professions that commonly analyze data, such as research. Participating in a short training session significantly increased participants' performance. Initial political affiliation slightly reduces the ability to assess whether statements made by named politicians contained checkable facts.

Keywords: *Checkable Statements; Fact-Checking; Political Affiliation; Training*

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Fact checking has emerged as a new way of holding those in power to account with regards to the accuracy and veracity of their claims (Amazeen, 2016). Over the last decade over 110 fact-checking organizations have appeared in 47 countries (Stencel, 2017). Broadly, these organizations aim to assess the validity and "truthfulness" of statements made by leading individuals, organizations, and governments and force them to accept responsibility when their claims are inaccurate, misleading, or false (Graves, 2016). As a result, many hope to promote public discourse and debate by providing clear and rigorously vetted information to the public, allowing them to make informed decisions (Elizabeth, 2014). In Argentina, the context of this study, the local fact-checking organization Chequeado has existed online since 2010.

For fact-checking to be successful, the first step is to accurately identify if statements contain facts that can be checked. Without being able to identify if information presented is fact or opinion, fact-checkers and the public alike would have no basis on which to begin their scrutinizing. For this, Chequeado identifies four categories of "checkable facts" based on the following classification: historical data (e.g., "it rained yesterday"), comparisons (e.g., "it rained more in Buenos Aires than in Córdoba"), legality (e.g., "I can have a driver's license as I am over 18 years old"), and statistical (e.g., "80% of students complete school"). Chequeado discards statements relating to opinions and future projections, as these cannot be verified, and also statements pertaining to religion or the personal life of public figures (Chequeado, 2015).

Although this methodology is helpful in defining checkable facts, "real-life" statements, speeches, and discourses do not always neatly fit into simple categories. Facts can be complex and validly open to multiple interpretations (Uscinski & Butler, 2013), particularly when talking about broad concepts with multiple valid definitions (such as "poverty" or "economically sound policy"). Statements may also contain a mix of facts and opinions, making them hard to categorize and analyze. Worryingly, research has shown that distinguishing between facts and opinions is a major challenge, even for fairly well-educated adults (Kuhn, 2010).

To further complicate matters, political statements form part of wider, complex contexts such as national elections or debates where differing sides of the argument are constantly present (Amazeen, 2015). Information may be presented across a variety of media on different platforms, such as radio, television, or online. Being able to critically evaluate the quality of a source and its information is part of being media literate, a skill that is increasingly associated with active and responsible civic participation, but there isn't much evidence of this being a prevalent skill among all sectors of society (Livingstone, Van Couvering, & Thumim, 2005; Maksl, Ashley, & Craft, 2015; Wineburg & McGrew, 2016).

Following this, our first research question was regarding to what extent individuals from the general public are able to identify if a statement is checkable (i.e., contains at least one checkable fact, even if it also contains noncheckable information), as this would constitute a small component part of wider media literacy. More specifically, we were interested in seeing which demographic factors (such as age, gender, education, and profession) are associated with this ability.

RQ1: *Which demographic characteristics are associated with more accurate identification of checkable facts?*

Identifying if statements contain checkable facts is important if we expect citizens to be able to critically evaluate information. We were interested in looking at how training participants in "checkable fact identification" influences this ability. Such abilities do not arise spontaneously, but specific educational activities within school or otherwise have been shown to foster critical thinking skills (Lehrer, Schauble, & Lucas, 2008). Developing media literacy has also been the subject of recent studies, with several programs showing improvements in media literacy after specific interventions (Kleemans & Eggink, 2016; Maksl, Craft, Ashley, & Miller, 2016). Thus, we expect a specific training activity to be able to improve checkable fact-detection capacity. As such:

H1: *Training can improve a participant's ability to identify if statements contain checkable facts, compared with a control group.*

Since motivated reasoning studies have shown that initial political beliefs can be strong indicators of how individuals will respond to a fact-check (Jarman, 2016), and that individuals may reject information that runs contrary to their prior beliefs even if presented with contradictory evidence (Nyhan & Reifler, 2010), we were interested in understanding whether political preferences could play a part in what people perceive as a checkable claim. For this:

H2: *Knowing the author of a political statement influences the ability to identify if a statement contains a checkable fact.*

H3: *Being politically closer to the author of a political statement influences the ability to identify if a statement contains a checkable fact.*

Method

Procedure

We used a randomized controlled experiment where participants completed an online demographic questionnaire before reading an eight-sentence text presented as a fragment from a political speech and identifying which of the statements contained checkable facts. This was completed online, with an estimated average duration of 10 minutes. A total of 3,557 participants were recruited in March 2016, principally using Chequeado's mailing lists and social media channels. Participants were randomly assigned to either a control group or to one of two treatment groups. The control group (n = 899) was used to determine the baseline level capacity of correctly identifying statements containing checkable facts. In the trained group (n = 826), participants were first asked to complete a 15-minute online training exercise. The exercise provided a practice set of 16 stand-alone statements, where participants received direct feedback and explanations on the answers given before evaluating the original fragment. The politically sympathetic group (n = 1,832) completed the same exercise without training, but in this case the text was randomly assigned an

"author"—either the current Argentine President Mauricio Macri (n = 925) or his predecessor and opponent Cristina Fernández de Kirchner (n = 907).

Participants

Approximately 66% of participants were men. Most of the people in our sample (80%) were under the age of 45 and 47% attended university, while 72% live in the province or city of Buenos Aires. Regarding political affinity, a 10-point scale (1 being very opposed to the politician in question and 10 being very aligned with them) showed that participants were relatively distant from both politicians, although somewhat more aligned with Fernández de Kirchner (M = 4.29, SD = 2.77, Median = 4.00) and somewhat more opposed to Macri (M = 3.43, SD = 2.64, Median = 3.00).

The random assignment of participants to each experimental group was successful in constructing balanced and comparable groups. Two-tailed t-tests of equality of means across the experimental groups showed that treatment and control groups do not differ significantly in the following dimensions: gender, age, place of residency, education level, and political affinity (all p values > .10).The only variable with a statistical difference at the p = .05 level is the percentage of participants whose profession is communication.[1]

Online Questionnaire

Participants received the following fictional text based on national energy, a topic on which both politicians chosen generally agreed—i.e., it could have been said by either (statements containing checkable facts are underlined in this case, see Table 1 for an annotated sample).

Results

To answer RQ1, we estimated a stepwise regression to identify the demographic characteristics that were associated with checkable fact identification ability. For this, we regressed the percentage of correctly identified statements on participants' gender, education, age, and profession while controlling for each experimental group (see Table 2).The results of the regression indicated that the predictors explained 5.95% of the variance, adjusted $R2$ = .06, $F(15,3390)$ = 14.3, p < . 001. Men scored better than women, outperforming them by almost 2%, β = 0.02, $t(3390)$ = 3.93, p < .001, holding all other variables constant. Age also played an important role. Compared with over-66-year-olds (our base category), younger participants significantly scored higher. For instance, respondents under 25 years old obtained 10.4% more correct answers than participants older than 66 years old, β = 0.10, $t(3390)$ = 4.81, p < .001.

Participants with a university-level education or higher also significantly scored higher on average than participants with a lower education level, β = 0.03,

Table 1 Full Extract With Explanation of Checkable and Noncheckable Statements

Full extract	Checkable fact?	Explanation
(1) Energy is a vital topic. (2) A country cannot grow if it does not produce its own power. (3) Power production is fundamental, but it is also the leading cause of climate change. (4) If we don't manage to lower our greenhouse gas emissions, then humans aren't going to be able to breathe anymore. (5) This is the reason why we work to ensure energy sovereignty in this country. (6) Today, the production of renewable energies in our system is minimal. (7) We are going to double it in the next 10 years and show that Argentina can be a global leader in this field. (8) Pollution isn't just bad, it's also against the law in Argentina.	1: No	It is a generalized value judgment that cannot be measured.
	2: Yes	The growth of countries that do or do not produce power could be checked.
	3: Yes	Causes of climate change can be checked against scientific studies.
	4: No	Future projections are not checkable.
	5: No	Reasons why people do things are not checkable.
	6: Yes	Percentages of renewable and nonrenewable energies can be checked and compared.
	7: No	This is a future projection.
	8: Yes	Could be checked against Argentine laws.

Note. For the full extract, statements are numbered and checkable statements are underlined for demonstration purposes (they were not labeled in the study itself).

Table 2 Demographic Factors Associated With Checkable Fact Identification Scores

Independent Variable	β	SE(β)	p value	Unique R^2
Male	0.025***	0.006	0.000	0.005
University level or more	0.027***	0.007	0.000	0.005
Under 25 years	0.104***	0.022	0.000	0.007
Between 26 and 35 years	0.092***	0.021	0.000	0.006
Between 36 to 45 years	0.079***	0.021	0.000	0.004
Between 46 and 55 years	0.049**	0.022	0.029	0.001
Between 56 and 65 years	0.035	0.023	0.126	0.001
Artists	−0.058***	0.022	0.008	0.002
Tradesman/-woman	−0.039***	0.009	0.000	0.006
Pensioner	−0.094***	0.026	0.000	0.004
Public sector employee	−0.058***	0.014	0.000	0.005
Entrepreneur or business owner	−0.035***	0.013	0.009	0.002
Technical	−0.035***	0.018	0.053	0.001
Private sector employee	−0.040***	0.015	0.006	0.002
Experimental group	0.012***	0.003	0.000	0.006
Constant	0.580***	0.022	0.000	

$F(15, 3390) = 14.30$, adj. $R^2 = 0.055$, Durbin-Watson = 1.942.

$t(3390) = 4.08$, $p < .001$. In terms of profession, artists, $\beta = -0.06$, $t(3390) = -2.63$, $p = .01$; tradesmen/-women, $\beta = -0.04$, $t(3390) = -4.53$, $p < .001$; pensioners, $\beta = -0.09$, $t(3390) = -3.69$, $p < .001$; public sector employees, $\beta = -0.06$, $t(3390) = -4.25$, $p < .001$; and private sector employees, $\beta = -0.04$, $t(3390) = -2.76$, $p = .01$, scored lower on average than researchers (i.e., PhD students, current researchers, and postdoctorates, in any field), who were our base category in the estimation.

We used an analysis of covariance (ANCOVA) to assess the effect of treatments on the percentage of correctly identified statements, controlling for the effect of the following covariates: gender, age, profession, and political affiliation. Our results suggest the existence of significant differences among these groups, $F(30, 3{,}375) = 9.15$, $p < .001$, adjusted $R^2 = 0.08$.

In particular, the result of the ANCOVA analysis shows that there was a significant simple main effect of training on participants' ability to identify if statements contain checkable facts. Participants in the trained group ($M = 0.73$, $SD = 0.17$) scored, on average, 4% higher than the control group ($M = 0.69$, $SD = 0.18$), $t(3{,}375) = 4.70$, $p < .001$. The magnitude of this treatment effect is Cohen's $d = 0.23$. This confirms H1, which predicted that training improves a participant's ability to identify if statements contain checkable facts. Interestingly, since the training activity involved two exercises—the first identifying if stand-alone statements contain checkable facts and the second identifying if statements that form part of a larger extract contain checkable facts—we find that participants did considerable better in the first exercise, scoring 13.2% higher, than in the second.

The result of the ANCOVA analysis also shows a significant simple main effect of knowing the author of a political statement on a participant's ability to identify if statements contain checkable facts. Participants in the politically sympathetic group ($M = 0.68$, $SD = 0.18$) scored, on average, 2% lower than participants in the control group, $t(3{,}375) = -2.29$, $p = 0.02$. The magnitude of this treatment effect is Cohen's $d = -0.06$. This supports H2, which predicted that knowing the author of a political statement biases a participant's ability to identify checkable facts.

Zooming in on the politically sympathetic group, we investigated if different political preferences behaved in the same way, our test of H3. For this, we estimated separate multiple regressions for the participants who received the speech of Macri and for those who received the speech of Fernández de Kirchner. Specifically, we regressed the percentage of correctly identified statements as a function of the politically affinity, measured as a dichotomous variable equal to 1 if the participant has an affinity for that politician greater than the average and zero otherwise. We controlled for a participant's age, gender, and profession. The result of the separate regression for those who received the speech of Fernández de Kirchner indicated that the predictors explained 9.54% of the variance, adjusted $R^2 = .09$, $F(28, 845) = 3.15$, $p < .001$. It was found that being politically closer to Macri, holding all other variables constant, significantly reduced the percentage of correctly identified statements of the participants who received the speech of Fernández de Kirchner, $\beta = -.03$, $t(845) = -2.29$, $p = .02$, but being politically closer to Fernández de Kirchner did

not influence this percentage, β = .01, $t(845) = .63$, $p = .53$. On the other hand, the results of the separate regression for those who received the speech of Macri indicated that the predictors explained 6.48% of the variance, adjusted $R^2 = .06$, $F(28, 852) = 2.11$, $p < .001$. However, in this case, being politically closer to Macri, β ~ −.00, $t(852) = -0.01$, $p = .99$, or Fernández de Kirchner, β = −.01, $t(852) = -0.71$, $p = .48$, did not influence the percentage of correctly identified statements.

Discussion

Identifying if statements contain checkable facts is the first step in effective fact-checking practice. In our sample, 69% of statements were correctly identified as containing checkable facts, with young, university-educated males achieving the highest scores.We also find that having a university education was correlated with higher performance, which was not unexpected, as more education implies higher critical thinking skills. In terms of profession, researchers showed the highest scores, also perhaps unsurprising, given that research involves working with, interpreting, and drawing conclusions from data on a daily basis. Besides pensioners, artists scored the lowest, which may be as a result of the field being (generally) less data-driven. Men scored a little better than women, which mirror findings showing gender gaps in news consumption (Benesch, 2012) and media literacy (Livingstone et al., 2005).

One salient result was the effect of age, with younger participants scoring better and performance steadily declining as age increased. Although the reasons for this are unclear, one possible explanation might simply be age-dependent cognitive decline, as seen in other capacities such as inductive reasoning (Glisky, 2007), or an interaction effect of age and education, for instance, because modern national education standards emphasize more the development of critical thinking skills than previous versions (Ministry of Education and Sports, 2004).

As predicted, the capacity to judge if statements contain checkable facts does improve with a short training exercise based on direct feedback. The magnitude of this treatment effect was Cohen's $d = 0.23$. According to the classification of Cohen (1988), this is a small size effect. However, taking into consideration that this intervention took very little time, this is a promising finding in the context of promoting media literacy in youth. Thus, we would encourage identifying checkable facts as a potential further aspect of future programs.

Interestingly, the trained group participants performed better in the training module, where they identified stand-alone statements, than when categorizing statements from the full text. This shows that evaluating statements in context is more challenging, adding further complexity to the task of discerning between facts and opinions. This is consistent with other research that finds that transferring skills from a particular context, especially when taught in isolation, to another more authentic context can be challenging (Perkins & Salomon, 1992).

Political affiliations and knowing the author of a political speech slightly influenced participants' ability to identify checkable statements. Research has already found that

partisans are "motivated reasoners," and their prior beliefs undermine their attitudes to fact-checking (Jarman, 2016). Therefore, we hypothesized that the same may be true of identifying if statements contain checkable facts. This turned out to be correct; when told the author of the statement, scores decreased. The magnitude of this treatment effect is Cohen's $d = -0.06$, which is very small according to the classification of Cohen (1988). In spite of being a small effect size, our result suggests that motivated reasoning extends beyond people's belief toward a fact-checking claim to what people perceive as a checkable fact to begin with.

When looking in more detail at the effect associated with political affiliations, we found that when reading an extract readers thought to be Macri's, participants of all political views were able to equally distinguish between checkable and noncheckable statements. However, when believing the extract to be Fernández de Kirchner's, participants closer to Macri made 3% more errors. Although gender biases may have played a role (as Kirchner is female and Macri is male), another possible explanation could be that this experiment was conducted after 8 years of Kirchner's presidency but only a few months into Macri's, and this may have influenced individuals' starting positions and perceptions (i.e., Macri having not been given the chance to renege on promises or be caught up in political scandals).

However, as with all studies, ours presents some limitations. As other studies have shown, and our demographic analysis confirms, participants who visit and utilize fact-checking services are better informed, educated, and more interested in politics to begin with (Nyhan & Reifler, 2015). In this particular case, around 66% of participants were male, compared to 49% nationally. Many participants were university graduates (49%), whereas national averages indicate that only about 7% of over-25s have completed university degrees in Argentina (INDEC, 2015). Most were recruited from Chequeado's mailing lists and social networks, meaning that they had an interest in fact-checking to begin with, which may be associated with higher scores. It might be argued that audiences not as interested in fact-checking services would be less affected by any fact-checking intervention. We also did not study effects of socio-economic status, which has been associated with education levels and media literacy more generally (Livingstone et al., 2005).

Because of this, we are wary of generalizing our results across the whole country. As our results showed that more-educated participants scored higher (particularly when completing university education), we conjecture that the general capacity of Argentina might be lower overall, which is more consistent with prior research showing the difficulty of separating fact from opinions (Kuhn, 2010) and varying levels of general media literacy (Maksl et al., 2015).

We feel that this study provides further evidence to support the need for educational activities that develop media literacy and critical thinking skills more generally. More critical and media-literate citizens have been argued to strengthen democracies (Martens & Hobbs, 2015; Miller, 2012). If citizens are to be expected to combat the "fake news" and "alternative facts" narratives currently seen in political discourse, then focus must be placed on practicing transferring said skills into new, more authentic circumstances (such as discerning between facts and

opinions in online, print, television, and radio news reports). This is particularly important as in authentic situations, information is presented in wider contexts and with identified authors and not as unidentified, stand-alone statements (which our study suggests are easier to identify). A better education, which provides citizens with the tools to fully understand and evaluate discussions being held in their name, could construct better and stronger democracies, holding those with power accountable to their electorate when they make claims and promises and paying a price when they are found wanting.

Note

[1] Occupations and further statistical tests are available upon request.

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