Processing (Mis)information: Does Truth Matter?

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Introduction

In politics, information is used for a variety of purposes, such as to interpret and learn from, to believe in and persuade with, or to disagree and mislead with. Whatever it is we decide to do with information, when coming from media and politicians we seem to ought it important that the information we receive is truthful or, at least, honest. After all, do we not use this information to make up our minds on what to think about the important political issues facing the world today? It therefore comes as no surprise that most people are fearful of the possibility of being influenced and misled by information that is not truthful, leading us to make decisions that we arguably would not have made otherwise. Yet, do our decisions differ when they are based on something that is true versus something that is false? Do we process information unlike misinformation, and are our decisions consequences thereof?

The key inherent difference between information and misinformation[2] is their veracity: the former is true, while the latter is false. In this study, I shall argue that this distinction becomes irrelevant when taking into account individuals' beliefs. The following research question is proposed: *How is misinformation believed, interpreted and evaluated in comparison to information?* In general, I expect no differences in the effects of misinformation versus information on people's beliefs, as the effect of information and misinformation on individuals' beliefs arguably *both* depend on pre-existing attitudes (Hypothesis 1 and 2). This expectation challenges a common assumption present in recent debates on the topic of misinformation. Misinformation has been considered harmful because of its potential to mislead (Billiet, Pattyn, Opgenhaffen & Van Aelst, 2019; Wardle & Derakhshan, 2017). By giving the wrong idea or impression, misinformation could arguably make people believe or decide something they would not have when only presented with truthful information. However, if misinformation is processed similar to information and believed and disbelieved in a personally motivated fashion, the assumption that misinformation could mislead an individual becomes questionable.

Aside from veracity, an inherent difference between misinformation and information I do argue to make a difference is the content it deals with. Misinformation typically exaggerates and therefore is more likely than information to reinforce existing beliefs. This means that misinformation polarizes individuals more across their beliefs in statements than information (Hypothesis 6). Moreover, beliefs in (mis)information are likely dependent on individual characteristics such as ability and motivation (Hypothesis 3 and 4; Petty, Briñol, & Priester, 2009) and the issue the (mis)information deals with (Hypothesis 5).

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[2] Information that is not corroborated by the analyses of experts and/or empirical evidence (Nyhan & Reifler, 2010)

In the upcoming paragraphs I present the arguments for these hypotheses. Amongst other theories, I will rely on the Elaboration Likelihood Model (ELM; Petty, Briñol, & Priester, 2009) and on theories of motivated reasoning (Kunda, 1990; Lodge & Taber, 2013). All in all, this study contributes to our understanding of the way we can be influenced and misled by information that is not truthful versus information that is and whether - in processing information - truth really matters.

Theoretical Framework

Applying the Elaboration Likelihood Model to Misinformation

The ELM deals with the way individuals process information. It postulates that individuals do so via two one of two different routes: the central versus the peripheral route. When processing information via the central route, individuals engage carefully and thoroughly with the information they receive. This means that by reflecting on it, they connect the information with their pre-existing knowledge and beliefs and 'integrate it in their overall cognitive network' (Westerwick, Johnson, & Knoblock-Westerwick, 2017, p. 344). When processing information via the peripheral route, individuals lack the motivation and ability for such effortful reflecting. Instead, individuals do not scrutinize the message content much and rely on heuristics, best understood as context cues such as the credibility of the source they receive the information from. While both central and peripheral processing can result in persuasion by the information received, persuasion is likely to be most lasting when information is processed via the central route. In different words, this means that if changes (including reinforcements) in attitudes or beliefs are the result of a confrontation with a piece of information, they are most likely to stay when one has considered the content of the information thoroughly. Considering misinformation is information, there is no reason to assume that the same would not occur when confronted with misinformation.

The likelihood of individuals engaging in the more effortful central processing or the less so peripheral processing roughly depends on two characteristics. First, a person's general motivation to think about a message (Petty & Cacioppo, 1979). If there exists no interest in a piece of information whatsoever, it is very unlikely that someone would take the effort of carefully scrutinizing the information. In their model, Petty and Cacioppo (1979) consider perceived personal relevance of the information the most important determinant of an individual's interest and motivation. Simply put, in order to carefully process information, the topic the information is on should be at least of some relevance, either because it involves a situation close to home, your work, or someone you voted for or something you believe in. The same would count for misinformation and this makes sense: an individual is more likely to scrutinize misinformation on an event that happened in their own town than misinformation

on an event that happened in a town one has never heard of for the simple reason one cares about the former, but not about the latter.

Next to motivation, a person's ability determines the likelihood of engaging in central or peripheral processing. Ability refers to an individual's pre-existing knowledge and attention resources (Westerwick et al., 2017). The more a message is repeated, the more the message will be attended to, increasing the likelihood to engage in central processing. The more knowledge an individual has, the more capacity a person has for scrutinizing the information, also increasing the likelihood to engage in central processing. In sum, individuals are more likely to engage carefully and thoroughly with information they receive when motivation and ability are high. As for motivation, for ability too there is no reason to assume that the same processes would not occur when confronted with misinformation in comparison to information.

Where differences in processing information versus misinformation might become apparent, are in an individual's reliance on source cues. Source cues are more important for the peripheral route because these individuals possess lower motivation or ability to process the information in-depth (Westerwick et al., 2017). More specifically, when receiving information from a trusted or non-stigmatized source, an individual is less likely to consider the information carefully than when the information is from a distrusted or stigmatized source. Since information on political issues often come from media and politicians, individuals are therefore subject to party and news bias. Considering that misinformation may typically come from different – generally less trusted and more stigmatized - sources than information (Wardle & Derahkshan, 2017), misinformation may be processed more thoroughly via the central route than information. However, if both information and misinformation come from equally (dis)trusted sources, source cues according to the ELM model would predict no differences in the way misinformation versus information is processed. Therefore, in sum, all arguments of the ELM apply to both information and misinformation.

Regardless or in the absence of any source, individuals are not free from bias. The ELM predicts that when carefully assessing the content of a message individuals rely on their pre-existing knowledge and beliefs (Westerwick et al., 2017). Pre-existing knowledge and beliefs, in turn, are known to play a crucial role in *how* the information is assessed, such its valence (i.e. positive or negative). This brings me to the second theory upon which the hypotheses are based, namely that of motivated reasoning (Kunda, 1990).

Motivated Reasoning & Misinformation

Motivated reasoning theory deals with the idea goals or motives affect reasoning (Kunda, 1990; Lodge & Taber, 2000; Lodge & Taber, 2013;). Individuals draw self-serving conclusions because such conclusions are most plausible and take the least cognitive effort given their prior beliefs and attitudes (Taber & Lodge, 2006; Zaller, 1992). Individuals are therefore psychologically motivated to maintain and support existing evaluations (Redlawsk, Civettini & Emmerson,

2018) and biased to towards a decision that conforms with what they already know. Relating this to how individuals assess information, it may well be that individuals do not only believe information that aligns with their attitudes more, but also believe misinformation that aligns with their attitudes more. Conversely, attitude-incongruent information and misinformation will more likely be disbelieved. From this perspective, the distinction between attitude-congruent and attitude-incongruent may be much more important than that between information and misinformation. This brings about the first two hypotheses, which are also depicted in Table 1. It may be clear that there are thus no general differences expected in the effects of misinformation and information on individuals' beliefs.

> **Hypothesis 1**: (Mis)information is more likely believed in attitude-congruent situations
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> **Hypothesis 2**: (Mis)information is more likely disbelieved in attitude-incongruent situations

Table 1 – Visual representation of Hypothesis 1 and Hypothesis 2

	Information	**Misinformation**
Attitude-congruent	+ Belief	+ Belief
Attitude-incongruent	-- Belief	-- Belief

Although no general differences are expected in the effects of misinformation and information on individuals' beliefs, motivated reasoning theory does distinguish between two competing motivations: accuracy goals and directional goals (Kunda, 1990). Accuracy goals arise in situations where individuals are motivated to provide accurate responses (e.g., a situation in which they will later have to justify their choices to others) (Kunda, 1990; Strickland, Taber, & Lodge, 2011). This type of motivation tends to evoke more elaborate and careful reasoning. Directional goals are those motivational factors that guide one's evaluations toward a preferred end result, such as hypothesized in H1a and H1b.

Accuracy goals can be triggered by questions, such as a justification, and incentives, such as a monetary reward. It has indeed been found that when individuals are asked to distinguish misinformation from information, they are most able to do so when receiving a monetary reward (Prior, Sood & Khanna, 2015) or when motivated to think analytically (Pennycook & Rand, 2019). Moreover, questions that tap accuracy such as asking individuals to rate information as true or false, accurate or inaccurate, also trigger accuracy goals (Swire et al., 2017). If, however, individuals receive no incentives and the wording of perceived accuracy questions are changed to be more questions regarding belief, directional goals are arguably more likely to dominate. Indeed, finding that individuals *can* distinguish between true and false in incentivized circumstances, does not say much about respondents' initial beliefs.

Yet, not only incentives or questions may trigger or enhance accuracy. Individual-level differences also come into play when evaluating (mis)information. More specifically, this study considers individuals' ability and motivation (Petty & Cacioppo, 1979) to moderate the extent to which (mis)information is believed. Ability refers to an individual's pre-existing knowledge and motivation refers to an individual's perceived personal relevance of the information. Ability and motivation are therefore also arguably intertwined: the more relevant an issue is, the more likely one has more knowledge on it. Related to processing (mis)information, this could mean that when both motivation and ability are high, an individual more critically assesses (mis)information, consequently making them better apt to discern real from fake. This is in line with Pennycook and Rand (2018), who found that individuals were actually better to discern real from fake news among headlines that were consistent with their political ideology rather than inconsistent. In other words, when levels of ability and motivation are high, individuals are arguably better aware of what has been said or happening because it is something that is generally of more interest to them (Pennycook & Rand, 2018). As a consequence, individuals are better in signalling misinformation, in turn decreasing the likelihood they will state to believe the information they might know to be false while increasing the likelihood to believe information they know to be true. This constitutes the third and fourth hypothesis:

Hypothesis 3: Misinformation is more likely disbelieved when individuals' ability and motivation are high

Hypothesis 4: Information is more likely believed when individuals' ability and motivation are high

Since individuals' ability and motivation partly depend on their knowledge on the issue the information deals with, the general familiarity of the issue arguably also plays a role in the extent to which (mis)information is believed. Generally speaking, familiar issues are likely those that are perceived as most relevant by the public. This, in turn, increases the likelihood that individuals hold stronger opinions on the issue. For this reason, (mis)information on familiar issues can be more easily categorised into attitude-congruent and attitude-incongruent. Put differently, in assessing (mis)information on familiar issues – political bias is more likely to drive individuals' belief. In assessing (mis)information on unfamiliar issues, however, there are no pre-existing beliefs of political predispositions steering individuals' beliefs. This makes them less likely to process the information effortfully and increases the likelihood to accept any information on an unfamiliar issue. This leads to the fifth hypothesis:

Hypothesis 5: Individuals are more divided in their beliefs in (mis)information on familiar issues than on unfamiliar issue

Information that is more politically coloured may thus drive individuals' beliefs more than information that is not. Yet, misinformation more often than information deals with highly partisan political content to drive engagement (Pennycook & Rand, 2018). It seems to follow that misinformation has the potential to be more easily (dis)believed, as highly partisan content that is untrue may take more extreme forms. An interesting yet under-addressed finding coming from Swire and colleagues' (2017) experiment, is that the differences in believing misinformation are indeed bigger between Democrats and Republicans than the differences in believing information. Given that misinformation tends to exaggerate, it is likely to have a greater effect than information in both attitude-congruent and attitude-incongruent situations. It is more likely to be believed in attitude congruent situations, and more likely to be disbelieved in attitude-incongruent situations. In other words, in both situations, misinformation is more likely than information to reinforce existing beliefs, which means that it leads to greater polarization in the population at large. This constitutes the sixth and last hypothesis:

> **Hypothesis 6**: Misinformation polarizes individuals more across their beliefs in statements than information

Method

By building on the ELM and findings of previous studies, I elaborate an experimental design that takes into account four important issues that were either missing or under-addressed in previous experiments. First, I intend to compare the processing of attitude-congruent *and* incongruent information *and* misinformation. In previous studies, this comparison was missing as it only compared beliefs in misinformation versus information coming from one side of the political spectrum (i.e. Republican in Swire et al., 2017). Second, in previous studies no distinction was made between the kind of issues the (mis)information addressed.

Third, previous studies tapped respondents' reactions to misinformation by asking them to assess the accuracy of statements and to discern real from fake news. However, asking individuals about facts instead of personal beliefs could decrease political differences significantly. Therefore, in this study, I intend to tap respondents' reaction by asking them to rate their belief in statements.

Fourth, based on the finding that individuals tend to choose interpretations of facts that rationalise existing opinions or justified party policies (Gaines et al., 2007), respondents will additionally be asked to interpret the (mis)information they are confronted with, and to attribute responsibility for the issue addressed in the (mis)information. These additional measures are thus motivated by the idea that even if individuals would be able to accurately perceive the same (non-)facts, they can make different judgements about their meaning

(Gaines et al., 2017) and selectively use arguments to confirm their preferred worldviews by allocating responsibility in a potentially opportunistic fashion (Bisgaard, 2019).

Experimental Design

In assessing how counter attitude-incongruent and attitude-congruent information versus misinformation is processed, a 3x2 factorial design is employed, resulting in a total of four treatment combinations. Table 2 below depicts the experimental design.

Table 2 – Experimental Design

	Information	**Misinformation**
Attitude-congruent	Group 1	Group 2
Attitude-incongruent	Group 3	Group 4
Attitude-neutral	Group 5	Group 6

A total of 1500 participants will be recruited. The participants will be randomly assigned to one of six treatments (3x2 factorial design). As the experiments addresses four issues – two familiar and two unfamiliar issues - 125 participants will be assigned to each treatment. A preliminary selection of statements can be found in Appendix A. The target group consists of adults from the population of eligible voters. The recruitment of participants will also employ age and gender quotas to roughly match the population margins of the UK.

Participants are provided with a link that takes them to the online survey-experiment. After being presented with a brief description of the purpose of the survey, participants are asked several demographical questions, such as their age, gender, level of education, ideology and employment-status. After, their political attitudes on several relevant issues are tapped: Brexit (the EU), immigration, healthcare and railway. These political attitudes are used to predict the extent to which the (mis)information is in line with pre-existing beliefs, and therefore likely believed and evaluated. Self-reported past voting-behaviour is also tapped. Moreover, participants are asked to select their most-read news sources. Political interest and political knowledge are also measured to tap participants' ability and motivation.

After answering this battery of questions, respondents are assigned to one of six groups where they will be presented with a statement. These statements are presented plainly, that is without headlines, names (e.g. coming from a specific politician) or source-cues (a specific newspaper). Respondents have to rate their belief in the statement through a feeling-thermometer (cold/warm), ranging from 0 to 100 and a Likert-scale ranging from 1 (I do not believe this at all) to 7 (I completely believe this). Next, respondents are asked to attribute responsibility to several political actors through a drop-down list, and various questions concerning their interpretation of the statement (e.g. Is this a high or a low number/Is this a good or a bad thing).

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Appendix A – Preliminary Case Selection

Familiar Issues (Congruent = pro-Brexit)

Issue: Jobs

	Information	**Misinformation**
Attitude-congruent	Option 1: *(Only) 15% of British jobs in manufacturing are depending on demand from Europe* Option 2: *The rights of UK and EU employees working in the UK will most likely not change after a no-deal Brexit*	Option 1: *Brexit has no impact on the amount of employees hired by (international) companies in the UK* Option 2: *High street retailers and manufacturing firms are not cutting jobs across the country as a result of Brexit / are not affected by Brexit*
Attitude-incongruent	Option 1: *Brexit has already negatively affected the amount of employees hired by (international) companies in the UK* Option 2: *High street retailers and manufacturing firms - are cutting jobs across the country as a result of Brexit / - are affected by Brexit*	Option 1: *Two-thirds of British jobs in manufacturing are depending on demand from Europe* Option 2: *The rights of UK and EU employees working in the UK will most likely change after a no-deal Brexit*

Issue: Immigration

	Information	**Misinformation**
Attitude-congruent	Option 1: *EU immigration has the potential to drive wages down* Option 2: *There are no large positive effects of EU immigration on average*	Option 1: *Immigrants give less to the UK economy than they take out in terms of taxes* Option 2: *EU immigrants pay less in taxes than they*

	employment, wages, inequality or public services	take out in welfare and the use of public services
Attitude-incongruent	Option 1: *Immigrants give more to the UK economy than they take out in terms of taxes* Option 2: *EU immigrants pay more in taxes than they take out in welfare and the use of public services*	Option 1: *EU immigration does not have potential to drive wages down* Option 2: *There are large positive effects of EU immigration on average employment, wages, inequality or public services*

Unfamiliar Issues

Issue: Railway

Information	Misinformation
Option 1: *The UK government subsidizes the railways with an amount of around 5 billion per year*	Option 1: *The UK government subsidizes the railways with an amount of around 1 billion per year*
Option 2: *More than half of the railways is nationalized*	Option 2: *Less than half of the railways is nationalized*

Issue: Health

Information	Misinformation
Around 260 patients a year lose their sight due to lengthy treatment delays	*Around 740 patients a year lose their sight due to lengthy treatment delays*