

**Professor Sander van der Linden: “I think there is reason to be optimistic about our ability to deal with fake news and be less influenced by it”**

**“Injecting you with a small, weakened dose of a virus triggers antibodies in the immune system to help provide resistance to future infection, you can reasonably do the same with information. When you expose people to a very small dose of fake news, it triggers mental antibodies that can provide resistance against future exposure to fake news in an attempt to immunize people”**

*Interview with Sander van der Linden, Assistant Professor in Social Psychology and Director of the Cambridge Social Decision-Making Lab with the University of Cambridge*

*Interview by Mark Sinclair Fleeton*

**RÆSON: How would you define fake news?**

VAN DER LINDEN: Clearly, it's a term everybody uses to denote what they want with it in a Donald Trump-sense – things we don't like is fake news. If we define it more formally, it's used for all kinds of things. For things that are incorrect, misinformation, deception, satire. I tend to distinguish between misinformation, disinformation and propaganda. And those three terms are all connected to different functions of fake news. Misinformation is just information that is incorrect – simply false. This could be an accident or a simple error. Disinformation is misinformation coupled with a psychological intent to deceive or manipulate people. The “dis” really stands for deception in a way. And then propaganda is disinformation coupled with a political agenda. It could be state-run or not. The line between disinformation and propaganda is where I see fake news being described as a deliberate attempt to manipulate people's opinion and possibly their preferences for voting.

**RÆSON: You have stated that most people can be fooled by fake news – regardless of age, experience and education. Why do you think that is?**

VAN DER LINDEN: I think it is very difficult to untangle what is true and fake from the content that people receive. Imagine that you are browsing on a news website. Everybody has limited time and resources, and we are not always paying attention, so we are just reading an article. We look for various cues in the way we process information. Important cues are: Do I agree with this? Does it fit with what I already know about the world? Does it sound plausible based on how I see things? If we can check those boxes, people are quicker to accept information and less critical with the information, than if it doesn't. Sometimes sources are mentioned, and they are false, and statistics are presented, and they are out of context. It takes quite a bit of investigation to figure out whether or not the information is real. I think that's a step most people don't actually take because they don't have the time, they are bombarded with information or they don't want to for some other reason. People read maybe ten, twenty, thirty or a hundred articles a day and so we can't be fact-checking everything. This is where fake news leverages its opportunity in between the articles that people read to dupe people with false content. That goes for everyone. I find myself sometimes reading an article and then I realize: “Wait, what is this news site?” I thought it said ABC, but then it said ACB or something and it's made to look like the ABC News website, but in fact it's just some fake news website. It takes a while to realize this because when something looks very similar to what we are used to seeing, we are less likely to see the discrepancies. These sorts of impersonation tactics are very common.

**RÆSON: You have also stated that facts are less likely to go viral. Do you think that reality is just less engaging or how would you explain that?**

VAN DER LINDEN: I think it has to do with a lot of facts being boring – sort of a yawn-factor. It isn't something that goes viral because it doesn't outrage or excite people or create some provocative or emotional response from people that then is shared over and over again. If there is a boring news report of something

that happened in a small town somewhere, people don't really care. But if I make up a story that Donald Trump is going to be impeached tomorrow, that's going to grab everybody's attention and go viral for a number of reasons: It plays into what 50 pct. or more of the population wants, it's shocking and has that novelty factor, and it's about someone famous. All of these factors that surround these types of stories make them more likely to go viral than the many thousands of boring, factual statements that we see every day, unfortunately. There was a recent paper in Science Magazine - I think it was called "[The spread of true and false headlines](#)" – showing, in various models, that false information actually spreads faster than true information.

**RÆSON: Vincent Hendricks and Mads Vestergaard from The University of Copenhagen have in their work identified a number of factors that seem to give rise to fake news: 1. A scarcity of attention 2. The specific logic of the media and the resulting medialization of politics resulting in “bubbles” (similar to financial bubbles) 3. The balance (or lack of balance) of news on social media. Would you agree with that?**

VAN DER LINDEN: I agree that all of those are contributing explanations – the scarcity of attention: That people are overloaded with information, and under constraint, the human mind resorts to shortcuts – heuristics or rule of thumb – and the ones we end up using are not the ones that give us the greatest amount of accuracy. For example, if I use a heuristic like “I know this person”, or “I trust this person because they are famous or because I voted for them”, those are not really a type of heuristics that necessarily lead to the most accurate information. People say that there has always been fake news, but I think the technology side of it makes it very different now. Back in World War II there was only the radio (and newspapers) as a source of propaganda. Now it spreads much faster and deeper through various networks where people spend a lot of time sharing information. The structure of the new media environment is really different, and it provides things like echo chambers and filter-bubbles and enhances all sorts of psychological processes that weren't necessarily there in the same way before. But on a deeper level I think the rise of fake news has to do with deep societal uncertainties and the fact that a lot of people in different societies feel that their values are either threatened or changing, or that the way that society is structured is changing. If we think about the future and massive events like climate change and global migration, there are lots of trends happening that are fundamentally upsetting to a lot of people and the way they are living their lives. They have to come to terms with the fact that change is going to be inevitable in a lot of negative ways for most people and I think that is a deeply unsettling reality. We essentially can't hide behind small country borders like we have in the past. When you think about countries like Denmark and the Netherlands, where I'm from, and countries where those problems our scale is times a billion, the United States and Russia, I think there are societal divides between people who welcome these changes and people who are really not fond of them and I think this, in turn, leads to a conflict in the social contract. Now, half of the population is defecting on the basic social contract of what we agreed on as our reality and basic values. I am just throwing out these numbers, but I think large majorities of people are questioning what they value in society, what they want for themselves and for their families in the future. I think that is leading people to engage in these information wars, these lies, these fake news-wars where people are going to push their information-agenda in a way that satisfies their view of the world.

**RÆSON: There seems to be a lack of trust or at least a perceived lack of credibility of the media or at least of the major news outlets. Why do you think that is?**

VAN DER LINDEN: There are different kinds of trust, but I think this trust really is very closely related to the issue of societal divides – that people no longer trust each other. There are different indicators of trust. There are some underlying trends among different subgroups of society, but the overall trust in science is still high. People never trusted politicians, so trust in politician has always been low. Maybe for a good reason, but that is even declining further – along with the *xxok?* trust in government. Interpersonal trust – the way people trust each other and their neighbors – is a very important indicator of social welfare and economic

wellbeing, and it *xxok?* has been steeply declining. Trust in the media specifically has also been declining, which I think is worrisome because it signals that people no longer trust the mainstream media. It is difficult to say why. Journalistic errors have been made. The way mistakes are handled, influence people, but that seems to be temporary. The notion of “false balance” has been very prevalent in media. When you break it down by for example ideology, it is not symmetric. People’s decrease in trust in the media is not equal for all different groups in society. Some groups distrust media far more than others. Particularly when that media reports on something that people don't want to hear about. I imagine that this is much less of an issue in Denmark and the Netherlands, but for example in the United States, mainstream media outlets that report on main stream science like vaccines, climate change or GMOs will be called fake news because they cover topics that are now contrary to what some people believe in. If the BBC reports on totally normal, legitimate scientific issues, people who now don't believe in those scientific issues - not because they necessarily understand or disagrees with the science, but because all of their friends and the groups they belong to identify themselves as a group who disagrees with this topic – will distrust the media as fake news, liberal, progressive and so on. If you voted for Brexit because you're worried about immigration and you then see an objective statistic that suggests that immigration has a positive net effect on the economy, you will distrust the media because that's not what you hear in your social circle and that's not what you have been told by propagandistic campaigns for Brexit as an example *xxok?*. On the flipside, the same thing is happening, and then you get this debate on “what are facts?” and what’s real and not. One side may be exaggerating the benefit of open borders and migration and the other side may be exaggerating the negative effects. The news media do have political slant and I think what is happening is that both sides distrust the outlets that have political slant and only the outlets that have the least slant are generally trusted by the public - like the BBC in England. I don't think people realize this, but media outlets have always had political slant and that is completely fine. People just need to be aware of it. When people watch Fox News, they know it has a right-wing, conservative slant and when they watch CNBC, people know it has a very left-wing, liberal slant. That politicization has become more prominent, so people use it as a tool to discredit media outlets with a political slant.

**RÆSON: As you point out, fake news is not a new phenomenon and the internet has been around since the 80's. Why does it play a bigger role now?**

VAN DER LINDEN: The algorithms filter the information that you see and then you get a false impression that everyone thinks this or that this is a real story when in fact it is fake. People are much more isolated in that way, but echo-chambers also exist in the real world - people migrate to places, where people share political and social views, so echo-chambers are not just there online.

There is a fundamental challenge in the transmission of information in the media environment. And I think it has serious consequences. Lots of people are worried about elections and the validity of the democratic process because a democracy relies on a well-informed public and if that pillar is threatened, that is very concerning. In the past, propaganda that didn't have social media still had a very big impact. If you look at the war in Vietnam or the Second World War, the consequences of propaganda were of a much more severe magnitude than what we are currently seeing. But I think what people worry about is that those scenarios could potentially repeat themselves with the right amount of fake news-propaganda. For example, a lot of people are worried about demonizing minorities and anti-immigrant sentiments that lead to hate speech and aggression against other people, to demonizing whole groups in society, to anti-science movements that can threaten whole communities if people stop vaccinating.

**RÆSON: Do you see that happening right now? You distinguish between the impact during the Second World War and today. Some of those factors are present in society today.**

VAN DER LINDEN: I think it is difficult to say with any kind of certainty, if it will lead to those sort of conflicts or dehumanization scenarios, but I don't know if I am being to alarmist about the whole thing. I

think it is important to distinguish how fake news and the media are influencing public opinion from the way that people actually behave. There is a gap there. It's still not the same as mobilizing people to go do something just because fake news is changing someone's opinion in a subtle way, tricking people into believing things that are not true and slowly harnesses those misconceptions for political purposes. There is research that you can in fact mobilize people to do things on Facebook. One study shows that you can target people with specific messages and get them to click on things and buy things without their knowledge. That is clearly not the same as going out and harming other people, but you do see ebbs and flows of xenophobia or racism without fake news as well. There are tensions in society that come and go, but I think that fake news has the potential to fuel the fire and enhance these conflicts and drive people further apart and have people act on information that either isn't true or is designed to lead to conflict. I think there is reason to be optimistic about our ability to deal with fake news and be less influenced by it. Maybe I'm biased because that is where all our work is – trying to help people resist being deceived and resist persuasion through fake news – but governments and societies are unstable. I think those factors are happening on their own and fake news is playing into that. And sometimes it is hard to disentangle those two.

**RÆSON: I suppose it also depends on the reach of fake news. Several people say that “Maybe the reach of fake news is not that great” and so the risks and consequences may not be that severe.**

VAN DER LINDEN: I think that is a fair argument to entertain. I've read a bunch of studies that say that the reach of fake news is actually not that far, but it does go deep for certain groups. I think the estimates differ quite a bit. There are some studies, they are very limited because it is difficult to measure, that show that people only have been exposed to a few fake articles before the elections (the US presidential elections of 2016, ed.), whereas other studies show that it might have been quite a decent proportion of people that have been exposed to false information. Certainly, the news reports around Facebook and almost a hundred million people whose information has been used to try and target them with specific messages is concerning. I don't think that it universally persuades people. I think there is a lot asymmetry – a lot of unequal influence – of fake news. But I think it is important to remember that in order for the democratic process to be undermined, fake news doesn't have to reach a lot of people. What if it only reaches a particular group that's very vulnerable to it and that group is large enough to swing a very close vote? If you look at Brexit: 51 pct. vs. 49 pct. These are things that hang on very small differences and that affect the course of society's future.

**RÆSON: Do you think that our perception or our ability to detect fake news have changed since the American presidential campaign of 2016?**

VAN DER LINDEN: I'd be skeptical. One of the things you see is that a lot of children in schools think that sponsored ad content is actually real news. I think that people – from an early age – are having difficulties with distinguishing real news from sponsored content. Partly because it is obscured in terms of what content is sponsored and what is not. I give people fake news-tests in every lecture *xxok?* I do on the topic. This includes other scientists. When I give you a few headlines and one is fake, it is very difficult to tell which one. One of the items is "Canadian man was not allowed to board a plane after security confiscated his bomb", which sounds like fake news. Who would be allowed to enter a plane after they bring a bomb aboard? But in fact, it was a real story. So, I think it is very difficult for people to actually know what fake news is. And even if we have the heuristics, the tools and the right training, it's still not that easy. I think that people are still very much fueled by emotions, biases and strongly held beliefs about the current political climate that clouds people's judgment. I would be much surprised if it is the case that people are better at detecting fake news since the election.

**RÆSON: You hinted a bit at this earlier. I heard that you were working on something that you call a fake news vaccine. What does that entail?**

VAN DEN LINDEN: It really is a method based on the idea of inoculation. Injecting you with a small, weakened dose of a virus triggers antibodies in the immune system to help provide resistance to future

infection. You can reasonably do the same with information. When you expose people to a very small dose of fake news, it triggers mental antibodies that can provide resistance against future exposure to fake news in an attempt to immunize people. In practice, it means that you first expose people to the scientific facts and then provide a weakened dose of a fake news story that tries to confuse people about the science, and you then illustrate in a very clear way, why it's fake news by providing examples and pointing out the elements that are fake. If people then come across the article on their own later on, they are much less likely to believe the contents of the article because they've been inoculated against it; they know that it is false. They know what the consensus in the scientific community is and are able to dismiss the article with the technique they have learned. We first did this with specific scientific topics like climate change but since then we have developed this fake news-game, which aims to immunize people at a much more general level.

In the game you can earn six badges, and those badges correspond to specific techniques that are used in the production of fake news. Things like impersonating other people, conspiracy theories, echo-chambers, polarization and so on. The way the game works is that it lets you step into the shoes of a fake news producer. We thought: "What better way than letting people step into the shoes of someone who is trying to deceive you to try to become resistant to those techniques could there be?" Because once you have applied them and you know how they work, you'll be able to detect when they are being used on you. It's sort of like going to a magic show. The first time you see a magician do a trick, you're fooled by it, but once he explains the trick, you won't be fooled by it again. That's really the logic behind the immunization metaphor, that if we – ideally preemptively – can teach people these techniques, they will be less susceptible to them.

### **RÆSON: How could that be applied in a broader sense?**

VAN DER LINDEN: The game is free, and anybody can share and play it. And the other aspect of it is that news media organisations can implement it very easily in the way they write articles, but they are very resistant to actually doing it because it prevents click bait. The news media is at the forefront of what is about to break. So they often know that a false story or unverified facts are going to hit the public and there is an opportunity to write articles that start with: "Here are the facts - here is what we know - here are the sources for what we know. There might be a story coming out soon that is going to try to convince you of this, but in fact they have no verified sources yet, you should be skeptical" and so on. If that is printed preemptively, people will be less affected by it. Many editors say that if you start an article with the facts and put the contested issue at the end, nobody is going to read it. We want to put the contested issue in the headline: "New article shows that there is a planet with aliens on it". The type of thing that lures people in. I understand that it is because they want to make money and that is very difficult now as a media company. They have to compete on headlines to reel people in. To some extent, it is incompatible with the current model, but I think inoculation would be compatible if we had a different way of reporting the news. The BBC has been quite receptive to it. We tried to get them to report uncertainties with their news and work with the Center for Evidence Communication here at Cambridge University because news is often reported, but the uncertainty around the evidence or numbers isn't reported, which gives people false impressions, too. They don't do that because people lose trust when you as a news organization signal that you are unsure about something. It's very complicated, but I do think that there are some very practical uses for this. To give you an example: There are people who actually implement this. Not because of our work. It is a rhetoric-strategy that people have intuitively used in the past. There are unions that try to inoculate people against not getting pay increases. Even though they don't use the language, I read this article that said they were doing the exact same thing. They tell workers: "The company is going to tell you that they don't have money for a salary increase or to adjust your wages for inflation and so on. However, this is entirely untrue. Here is the balance sheet and here is the amount available for salary increases. Here you can see that they have the money. They are just trying to deceive you, in fact." And then when negotiations come, the workers are inoculated, and they are not duped by manipulative arguments. They found this to be very effective. So, I do think of this as a very practical strategy.

**RÆSON: This is very much what is being discussed right now: What to do to countermand fake news. I visited the EU Commission that set up the East Stratcom Task Force. They report the fake news. They point out: This is fake news, this is fake news, and this is fake news. This is at least partly a different approach to yours. Do you think it is effective?**

VAN DEN LINDEN: Our approach is just one tool. I think we need many tools. I support media literacy and education in the long term to try to increase people's capabilities. I also support fact checking. I think that we need many, many tools to work together at the same time. The reason why we used this approach is because we know from a lot of psychology research that fact-checking after the "fact" is exposed doesn't seem to work. When you repeat the fake news that tends to strengthen the myth in people's memory associations, when you try to debunk something after the fact, what people remember is the false story and not the correction. I think this is traditionally why the media has struggled with this, because people are just not very responsive to things after the "fact". It's much easier psychologically if you can get there before it happens and that's really the purpose of inoculation. It can even be effective if you come after the fact. Nobody likes to be duped, so if you give people the idea that they are being duped, then they become more skeptical and reconsider what they know. I have mixed feelings about fact checking. The evidence suggests that it is only minimally effective. I wouldn't want to advocate a world without fact checking, but I do think that we need a variety of different tools, because not all of them are effective enough to really address the issue on their own.

*Dr. Sander van der Linden is an Assistant Professor in Social Psychology and Director of the Cambridge Social Decision-Making Lab with the University of Cambridge as well as Fellow and Director of Studies in Psychology at Churchill College. He works on topics such as the influence of social norms in shaping human altruism and cooperation in real-world social dilemmas such as climate change, public health, fake news and inequality.*