

# A Functional Analysis of Disinformation

Don Fallis<sup>1</sup>

<sup>1</sup> University of Arizona

## Abstract

Prototypical instances of *disinformation* include deceptive advertising (in business and in politics), government propaganda, doctored photographs, forged documents, fake maps, internet frauds, fake websites, and manipulated Wikipedia entries. Disinformation can cause significant harm if people are misled by it. In order to address this critical threat to *information quality*, we first need to understand exactly what disinformation is. After surveying the various analyses of this concept that have been proposed by philosophers and information scientists, I argue that disinformation is misleading information that has the *function* of misleading.

**Keywords:** deception, disinformation, lying, information quality, misinformation

**Citation:** Fallis, D. (2014). A Functional Analysis of Disinformation. In *iConference 2014 Proceedings* (p. 621–627). doi:10.9776/14278

**Copyright:** Copyright is held by the author.

**Acknowledgements:** For helpful feedback on earlier versions of this paper, I would like to thank Allen Buchanan, Blaise Cronin, Andrew Dillon, Tony Doyle, Kenny Easwaran, Luciano Floridi, Martin Frické, Jonathan Furner, Richard Fyffe, Birger Hjørland, Phyllis Illari, Cheryl Knott, Jens-Erik Mai, Neil Manson, Kay Mathiesen, Patti Montiel Overall, Bruce Schneier, David Livingstone Smith, Dan Zelinski, my graduate seminar on “Misinformation and Disinformation,” three anonymous referees for the 2014 iConference, and audiences at the School of Information Resources and Library Science at the University of Arizona, the Philosophy Club at the University of Arizona, a Workshop on Information Quality at the University of Hertfordshire, the 2009 Pacific Division Meeting of the American Philosophical Association, the 2009 iConference, the 2010 Annual Meeting of the American Society for Information Science and Technology, and the 2013 Security and Human Behavior Conference.

**Contact:** fallis@email.arizona.edu

## 1 Introduction

Prototypical instances of *disinformation* include deceptive advertising (in business and in politics), government propaganda, doctored photographs, forged documents, fake maps, internet frauds, fake websites, and manipulated Wikipedia entries. Disinformation can be extremely dangerous. When people are misled about important topics, such as investment opportunities, medical treatments, or political candidates, it can cause serious emotional, financial, and even physical harm.

Inaccurate information (or *misinformation*) can mislead people whether it results from an honest mistake, negligence, unconscious bias, or (as in the case of disinformation) intentional deception. But disinformation is particularly dangerous because it is no accident that people are misled. Disinformation comes from someone who is actively engaged in an attempt to mislead. Thus, developing strategies for dealing with this threat to *information quality* is a particularly pressing issue for information science (see Hernon 1995, Lynch 2001, Piper 2002, Walsh 2010, Rubin & Conroy 2012, Karlova & Fisher 2013).

In order to develop such strategies, we first need to improve our understanding of the nature and scope of disinformation. Toward this end, several philosophers and information scientists (e.g., Floridi 1996, Fetzer 2004, Floridi 2005, Fallis 2009, Floridi 2011) have offered analyses of the concept of disinformation. In this note, I provide counter-examples to show that all of these analyses either (a) exclude important forms of disinformation and/or (b) include innocuous forms of information that should not be counted as disinformation. I then propose and defend a new *functional* analysis of the concept of disinformation.

## 2 Previous Analyses of Disinformation

### 2.1 Floridi 1996

In one of the earliest discussions of the concept of disinformation, the philosopher Luciano Floridi (1996, 509) claimed that “disinformation arises whenever the process of information is defective.” However, this analysis is too broad. When someone makes an honest mistake, like *The Chicago Tribune* reporting that “Dewey Defeats Truman,” something in the process is defective. But such *accidental falsehoods* clearly are not disinformation. While they can certainly be misleading, it is only an accident if people are misled. The source of the information does not intend to mislead anyone (and does not benefit from people being misled).

### 2.2 Floridi 2005

Several years later, Floridi (2005, §3.2.3) claimed that “when *semantic content* is false, this is a case of *misinformation* ... And if the source of misinformation is aware of its nature, one may speak of *disinformation*.” In other words, disinformation is inaccurate information that the source knows to be inaccurate. This analysis repairs the shortcoming with Floridi’s 1996 analysis. It does not count accidental falsehoods as disinformation. When they ran the “Dewey Defeats Truman” story, the editors of *The Chicago Tribune* were not aware that the story was false.

However, Floridi’s 2005 analysis is also too broad. For instance, when you tell someone a joke or speak sarcastically, you are aware that what you are saying is false. But you are not spreading disinformation. Even though jokes and sarcastic comments are false, they are not misleading. The person to whom you are speaking is also aware that what you are saying is false.

### 2.3 Fetzer 2004

The philosopher James Fetzer (2004, 231) claims that disinformation “should be viewed more or less on a par with acts of lying. Indeed, the parallel with lying appears to be fairly precise.” In other words, disinformation is a statement that the speaker believes to be false and that is intended to mislead. This analysis repairs the shortcoming with Floridi’s 2005 analysis. For instance, it does not count jokes and sarcastic comments as disinformation. Jokes and sarcastic comments are not lies because they are not intended to mislead (see Mahon 2008, §1.4).

However, Fetzer’s analysis is also too broad. Someone who intends to spread disinformation with a lie might not succeed in doing so. Even though she believes that what she says is false, it might actually (unbeknownst to her) be true (see Mahon 2008, §1.2). While such *accidental truths* are lies, they are not disinformation because they are not actually misleading.

In addition, and more importantly, this analysis is too narrow. Lies are linguistic expressions, such as “A wolf is chasing my sheep!” (see Mahon 2008, §1.1). However, doctored photographs and falsified maps are also prototypical instances of disinformation. It is no accident when people are misled by such *visual disinformation* because that is precisely what the source of the information intended.

### 2.4 Floridi 2011

In his most recent discussion of the concept of disinformation, Floridi (2011, 260) claims that “misinformation is ‘well-formed and meaningful data (i.e. semantic content) that is false.’ ‘Disinformation’ is simply misinformation purposefully conveyed to mislead the receiver into believing that it is information.” In other words, disinformation is inaccurate information that the source intends to mislead the recipient.

This analysis is along the same lines as Fetzer’s analysis, but it repairs the shortcomings with Fetzer’s analysis. First, since Floridi explicitly requires that disinformation be false, accidental truths do not count as disinformation. Second, although he tends to focus on *propositional* information in his work, Floridi (2011, 84) allows that images and maps count as information. Thus, visual disinformation counts as disinformation on Floridi’s 2011 analysis.

However, Floridi's 2011 analysis is also too broad. Even if she says something that actually is inaccurate, someone who intends to spread disinformation still might not succeed in doing so. For instance, even though they are (unrealistically) intended to be misleading, *implausible lies* are not disinformation because they are not actually misleading.

In addition, and more importantly, this analysis is too narrow. Although prototypical instances of disinformation are inaccurate, disinformation can sometimes be *accurate*. For instance, politicians often use *spin* to mislead the public (i.e., they selectively emphasize only certain facts). Like prototypical instances of disinformation, such *true disinformation* is intentionally misleading and it poses a similar risk of harm to the recipient.

In fact, there is another respect in which Floridi's 2011 analysis is too narrow. Although disinformation is always misleading, it is not always intended to mislead. For instance, inaccurate information has been intentionally placed on the internet for purposes of education and research (see Herson 1995, Piper 2002, 19). A fake website advertising a town in Minnesota as a tropical paradise was created to teach people how to identify inaccurate information on the internet. In such cases, while the educators and researchers certainly foresee that people might be misled by their inaccurate information, they do not intend that anybody actually be misled. Even so, such *side effect disinformation* probably should count as disinformation. Just as with prototypical instances of disinformation, it is no accident when people *are* misled. Although the educators and researchers do not intend to mislead anyone, they do intend their inaccurate information to be misleading. For instance, a fake website would not be a very effective tool for teaching people how to identify inaccurate information on the internet if it was clear to everyone that it was a fake.

## 2.5 Fallis 2009

According to the information scientist Don Fallis (2009, §5), disinformation is “misleading information that is intended to be (or at least foreseen to be) misleading.” This analysis repairs the shortcomings with Floridi's 2011 analysis. First, since Fallis explicitly requires that disinformation be misleading, implausible lies do not count as disinformation. Second, since Fallis does not require that disinformation be inaccurate, true disinformation counts as disinformation. Third, Fallis does not require that disinformation be intended to mislead. The source of the information merely has to foresee that it is likely to mislead. Although the educators and researchers described above do not intend to mislead anyone, they do foresee that some people may be misled. Thus, side effect disinformation counts as disinformation on Fallis's analysis.

However, Fallis's analysis is too broad. In addition to side effect disinformation, it also counts some subtle forms of humor as disinformation. For instance, a significant number of people (including a few serious journalists) are actually misled by the satirical stories published in *The Onion* (see Fallon 2012). Moreover, since the editors of *The Onion* are clearly aware that this sort of thing is going on, they do foresee (even if they do not intend) that at least some people will be misled by the stories that they publish.

Fallis's analysis can easily be modified though so that it does not count satire as disinformation. We can simply leave off the “foreseen to be misleading” clause and say that disinformation is misleading information that is intended to be misleading. This modified analysis still counts side effect disinformation as disinformation. For instance, as noted above, although educators do not intend to mislead anyone with their fake websites, they do intend these websites to be misleading.

However, Fallis's analysis is also too narrow. Even when a source of information does not intend to mislead anyone and does not foresee that anyone will be misled, it may be no accident that the information is misleading. For instance, many of the people who disseminate conspiracy theories (e.g., that the President was not born in the United States or that the United States government was behind the 9/11 terrorists attacks) believe that what they are saying is true. Thus, they do not intend to mislead anyone, or foresee that anyone will be misled, by what they say. Even so, these false claims can mislead people *and* it is no

accident that people are misled. There is a mechanism that reinforces the dissemination of these false claims. For instance, certain websites and media outlets attract more readers and viewers by promoting these false claims.<sup>1</sup> Like prototypical instances of disinformation, such *adaptive disinformation* is not misleading by accident and it poses a similar risk of harm to the recipient.

## 2.6 Skyrms 2010

Recent work in biology on deceptive signaling in animals might provide an analysis of the concept of disinformation. According to the philosopher Brian Skyrms (2010, 80), “if misinformation is sent systematically and benefits the sender at the expense of the receiver, we will not shrink from following the biological literature in calling it *deception*.” Although Skyrms and the biologists that he cites use the term ‘deceptive signal’ rather than the term ‘disinformation’, they are trying to capture essentially the same concept. Thus, we might say that disinformation is misleading information that systematically benefits the source at the expense of the recipient. This analysis repairs the shortcoming with Fallis’s analysis. Although people who disseminate conspiracy theories may not intend to mislead others, they do systematically benefit from others being misled. Thus, adaptive disinformation counts as disinformation on Skyrms’s analysis.

However, Skyrms’s analysis is too narrow. Most of the time, disinformation imposes a cost on the recipient, as when the villagers waste their time running to the shepherd boy’s aid. However, disinformation need not always impose a cost on the recipient. In fact, it is sometimes intended to benefit the recipient. For instance, when a friend asks you how he or she looks, you might very well say, “You look great!” even if this is not true in order to spare his or her feelings. Admittedly, such *altruistic disinformation* does not pose the same risk of harm to the recipient that prototypical instances of disinformation do. But like prototypical instances, altruistic disinformation can be intentionally misleading.

Skyrms’s analysis can easily be modified, however, so that it counts altruistic disinformation as disinformation. We can simply leave off the “at the expense of the recipient” clause and say that disinformation is misleading information that systematically benefits the source. It is really just the “systematic benefit to the source” clause that is needed to count adaptive disinformation as disinformation.<sup>2</sup>

However, Skyrms’s analysis is still too narrow because it rules out the possibility of disinformation that does not benefit the source. Most of the time, disinformation does systematically benefit the source. However, it need not always do so. For instance, in order to avoid embarrassment, people often lie to their doctors about their diet, about how much they exercise, or about what medications they are taking (see Reddy 2013). If their doctors are misled, it can lead to incorrect treatment recommendations that can harm the patient. Admittedly, such *detrimental disinformation* may not pose the same risk of harm to the recipient that prototypical instances of disinformation do. But like prototypical instances, detrimental disinformation is intentionally misleading.

<b>Clearly Disinformation</b>		<b>Clearly Not Disinformation</b>	
Malicious Lies (ML)	non-accidentally misleading	Truthful Statements (TS)	not misleading
Visual Disinformation (VD)	non-accidentally misleading	Accidental Falsehoods (AF)	only accidentally misleading
True Disinformation (TD)	non-accidentally misleading	Jokes (J)	not misleading

<sup>1</sup> If the editors of *The Onion* do not just foresee that some readers will be misled, but actually benefit from this happening, then their stories probably should count as disinformation.

<sup>2</sup> In fact, Skyrms (2010, 76) himself notes that his analysis might be modified in this way. He just failed to see that this sort of modification was actually necessary.

Side Effect Disinformation (SE)	non-accidentally misleading	Sarcastic Comments (SC)	not misleading
Adaptive Disinformation (AD)	non-accidentally misleading	Accidental Truths (AT)	not misleading
Altruistic Disinformation (AL)	non-accidentally misleading	Implausible Lies (IL)	not misleading
Detrimental Disinformation (DE)	non-accidentally misleading	Satire (S)	only accidentally misleading

Table 1: Counter-examples to Previous Analyses of Disinformation

### 3 A New Analysis of Disinformation

Even though the modified Fallis analysis (in terms of an intention to be misleading) and the modified Skyrms analysis (in terms of a systematic benefit from being misleading) are too narrow, together they arguably capture all instances of disinformation. It would be unfortunate though if we had to resort to such a *disjunctive* analysis of disinformation. If an analysis requires two independent criteria, it suggests that we are really dealing with two separate phenomena (see Kingsbury & McKeown-Green 2009, 578-81). However, there is something that unifies all of the cases of disinformation discussed above. Disinformation is misleading information that has the *function* of misleading someone.

Roughly speaking, a *function* is “the action for which a person or thing is particularly fitted or employed” (American Heritage 2000). For instance, the function of a heart is to pump blood. Also, the function of a chair is to be sat upon. According to this analysis, the distinguishing feature of disinformation is that its function is to mislead people.

It should be noted that there are at least two different ways that something might acquire a function (cf. Graham 2010, 153-55). For instance, a heart has the function of pumping blood because that is what it *evolved* to do. By contrast, a chair has the function of being sat upon because that is what it was *designed* to do. In other words, the designer of the artifact *intended* it to have that function.

Disinformation can acquire the function of misleading people in either of these two ways. Most forms of disinformation, such as lies and propaganda, are misleading because the source intends the information to be misleading. But other forms of disinformation, such as conspiracy theories, are misleading simply because the source systematically benefits from their being misleading. Even though they might differ in terms of how that function was acquired, all instances of disinformation are unified by the fact that they have a certain function. And however that function was acquired, it is no accident that the information is misleading.

This analysis of disinformation does not seem to be too narrow. For instance, the adaptive disinformation that caused a problem for the modified Fallis analysis has the function of misleading (because the source systematically benefits from it being misleading). Also, the detrimental disinformation that caused a problem for the modified Skyrms analysis has the function of misleading (because the source intends it to be misleading).

In addition, this analysis does not seem to be too broad. It does not count as disinformation any of the cases discussed above that are not disinformation. For instance, accidental truths and implausible lies are not misleading. Also, while accidental falsehoods and satire can sometimes be misleading, the source of the information does not intend to mislead people nor does she systematically benefit from people being misled. If people are misled, it is just an accident.<sup>3</sup>

<sup>3</sup> As it stands, this functional analysis handles the cases discussed in this note. But there are some further complications that will be addressed in the full paper. For instance, a piece of information is often addressed to a large audience, and it may have the function

	Clearly Disinformation						Clearly Not Disinformation							
	ML	VD	TD	SE	AD	AL	DE	TS	AF	J	SC	AT	IL	S
<b>Floridi 1996</b>	√	√	√	√	√	√	√		√			√	√	
<b>Floridi 2005</b>	√	√		√		√	√			√	√		√	√
<b>Fetzer 2004</b>	√					√	√					√	√	
<b>Floridi 2011</b>	√	√				√	√						√	
<b>Fallis 2009</b>	√	√	√	√		√	√							√
<b>Fallis modified</b>	√	√	√	√		√	√							
<b>Skyrms 2010</b>	√	√	√	√	√									
<b>Skyrms modified</b>	√	√	√	√	√	√								
<b>Functional Anal.</b>	√	√	√	√	√	√	√							

Table 2: Analyses of Disinformation and Counter-examples

## 4 Conclusion

Disinformation can cause significant harm if people are misled by it. But in order to address this critical threat to information quality, we first need to understand exactly what disinformation is.<sup>4</sup> After surveying the various analyses that have been proposed, I have argued that disinformation is misleading information that has the function of misleading.

## 5 References

- American Heritage. (2000). *Dictionary of the English language, Fourth edition*. Boston: Houghton Mifflin.
- Fallis, D. (2009). A conceptual analysis of disinformation. *Proceedings of the iConference*.  
[http://schools.org/images/iConferences/fallis\\_disinfo1.pdf](http://schools.org/images/iConferences/fallis_disinfo1.pdf)
- Fallon, K. (2012). Fooled by ‘The Onion’: 9 most embarrassing fails. *The Daily Beast*.  
<http://www.thedailybeast.com/articles/2012/09/29/fooled-by-the-onion-8-most-embarrassing-fails.html>
- Fetzer, J. H. (2004). Disinformation: The use of false information. *Minds and Machines* 14, 231-40.
- Floridi, L. (1996). Brave.net.world: The internet as a disinformation superhighway? *Electronic Library* 14, 509-14.
- Floridi, L. (2005). Semantic conceptions of information. *Stanford Encyclopedia of Philosophy*.  
<http://plato.stanford.edu/entries/information-semantic/>
- Floridi, L. (2011). *The philosophy of information*. Oxford: Oxford University Press.
- Graham, P. (2010). Testimonial entitlement and the function of comprehension. In A. Haddock, A. Miller, & D. Pritchard (Eds.), *Social epistemology* (pp. 148-74). Oxford: Oxford University Press.
- Hernon, P. (1995). Disinformation and misinformation through the internet: Findings of an exploratory study. *Government Information Quarterly* 12, 133-39.

---

of misleading only part of that audience. In addition, although it is conceptual progress to see how the concept of disinformation is related to the concept of function, a more detailed analysis of what a function is will ultimately be required.

<sup>4</sup> The conceptual work in this note helps us to address this threat to information quality simply by identifying several important types of disinformation that we need to be aware of. In the full paper, I will discuss further how this functional analysis might help us to detect disinformation and to deter its spread.

- Karlova, N. A., & Fisher, K. E. (2013). A social diffusion model of misinformation and disinformation for understanding human information behavior. *Information Research* 18. <http://informationr.net/ir/18-1/paper573.html>
- Kingsbury, J., & McKeown-Green, J. (2009). Definitions: Does disjunction mean dysfunction? *Journal of Philosophy* 106, 568-85.
- Lynch, C. A. (2001). When documents deceive: Trust and provenance as new factors for information retrieval in a tangled web. *Journal of the American Society for Information Science and Technology* 52, 12-17.
- Mahon, J. E. (2008). The definition of lying and deception. *Stanford Encyclopedia of Philosophy*. <http://plato.stanford.edu/entries/lying-definition/>
- Piper, P. S. (2002). Web hoaxes, counterfeit sites, and other spurious information on the internet. In A. P. Mintz (Ed.), *Web of Deception* (pp. 1-22). Medford, New Jersey: Information Today.p
- Reddy, S. (2013). 'I don't smoke, doc,' and other patient lies. *Wall Street Journal*. <http://online.wsj.com/article/SB10001424127887323478004578306510461212692.html>
- Rubin V. L., & Conroy, N. (2012). Discerning truth from deception: Human judgments and automation efforts. *First Monday* 17. <http://firstmonday.org/ojs/index.php/fm/article/view/3933/3170>
- Skyrms, B. (2010). *Signals*. New York: Oxford University Press.
- Walsh, J. (2010). Librarians and controlling disinformation: Is multi-literacy instruction the answer? *Library Review* 59, 498-511.

## 6 Table of Tables

Table 1: Counter-examples to Previous Analyses of Disinformation .....	625
Table 2: Analyses of Disinformation and Counter-examples .....	626