



## UvA-DARE (Digital Academic Repository)

### Breaking the chain of deception

*A multi-stakeholder perspective on deceptive advertising and the potential of blockchain as a solution*

Antsipava, D.

**Publication date**  
2025

[Link to publication](#)

#### **Citation for published version (APA):**

Antsipava, D. (2025). *Breaking the chain of deception: A multi-stakeholder perspective on deceptive advertising and the potential of blockchain as a solution*. [Thesis, fully internal, Universiteit van Amsterdam].

#### **General rights**

It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

#### **Disclaimer/Complaints regulations**

If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: <https://uba.uva.nl/en/contact>, or a letter to: Library of the University of Amsterdam, Secretariat, P.O. Box 19185, 1000 GD Amsterdam, The Netherlands. You will be contacted as soon as possible.

# CHAPTER 1



General Introduction

Deceptive advertising is a growing issue in the contemporary digital environment. In the Netherlands, the Advertising Code Foundation (*Stichting Reclame Code*) received 4,866 complaints about advertising in 2023: a 15.9% increase from the previous year and 30.6% from five years prior (Stichting Reclame Code, 2019, 2024). Of the rulings, 23% addressed cases of deceptive and 24% of misleading advertising practices, with 58% of these ads disseminated via digital media marketing communications (including social media, display ads, online games, search engines, websites, emails and text messages, YouTube, and the like; Stichting Reclame Code, 2024). In fact, the Dutch government reported that 1.4 million Dutch citizens fell victim to online scams, such as phishing, in 2023 (Ministry of Justice and Security, 2024). The situation is similar and potentially more devastating around the globe. In the United States, the Federal Trade Commission (FTC) reported that between 2021 and 2023 consumers lost \$2.7 billion to scams originating on social media, of which 44% concerned e-commerce (Fletcher, 2023). In the United Kingdom, 42% of adults had been targeted by scams between 2023 and 2024, with 25% of 18-34 year-olds confronted with ads for non-existent products on social media (NatWest Group, 2024) and individual customers losing up to a quarter of a million pounds through ads utilising fake celebrity endorsements (NatWest Group, 2023).

National governments are recognising these issues and are taking measures to empower consumers to cope with and protect themselves from deceptive advertising practices. For instance, in the Netherlands a police-led campaign was launched in which a fake e-commerce website attempted to scam consumers in order to raise awareness about deceptive practices for Black Friday (De Weerd, 2024). Similarly, in the United Kingdom the national fraud and cybercrime reporting centre introduced a campaign ahead of the 2024 Christmas season to warn consumers about scams most popular at this time of year, including phishing and e-commerce fraud (Action Fraud, 2024). More permanently, the European Union adopted the Digital Services Act in 2022, which protects consumers from unfair and harmful advertising practices, for instance, by increasing transparency around the criteria used in recommender systems and for ad targeting, placing restrictions on ad targeting, outlawing 'dark patterns', and making it easier to report and remove illegal content (Council of the European Union, 2025; European Commission, 2024).

The problem of deceptive advertising is a product of the contemporary digital environment. Driven by ongoing digitalisation and an over-reliance by digital platforms, like Google and Meta, on advertising revenue as the foundation of their business models (Johnston, 2024a, 2024b; Yun & Strycharz, 2023), the digital advertising landscape has quickly grown in size and complexity (PwC, 2019). This growth has contributed to a burgeoning of intermediaries in the ecosystem, making it challenging to implement effective checks and balances across the system and allowing fraudulent practices to easily slip through the cracks (Braun, 2023; Pärssinen et al., 2018; PwC, 2019; Rejeb et al., 2020). At the same time, the monopoly that a few tech giants hold over digital advertising allows these companies to prioritise revenue maximisation at the expense of consumer well-being (Yun & Strycharz, 2023), thereby reducing the incentive to address the problem of deceptive advertising.

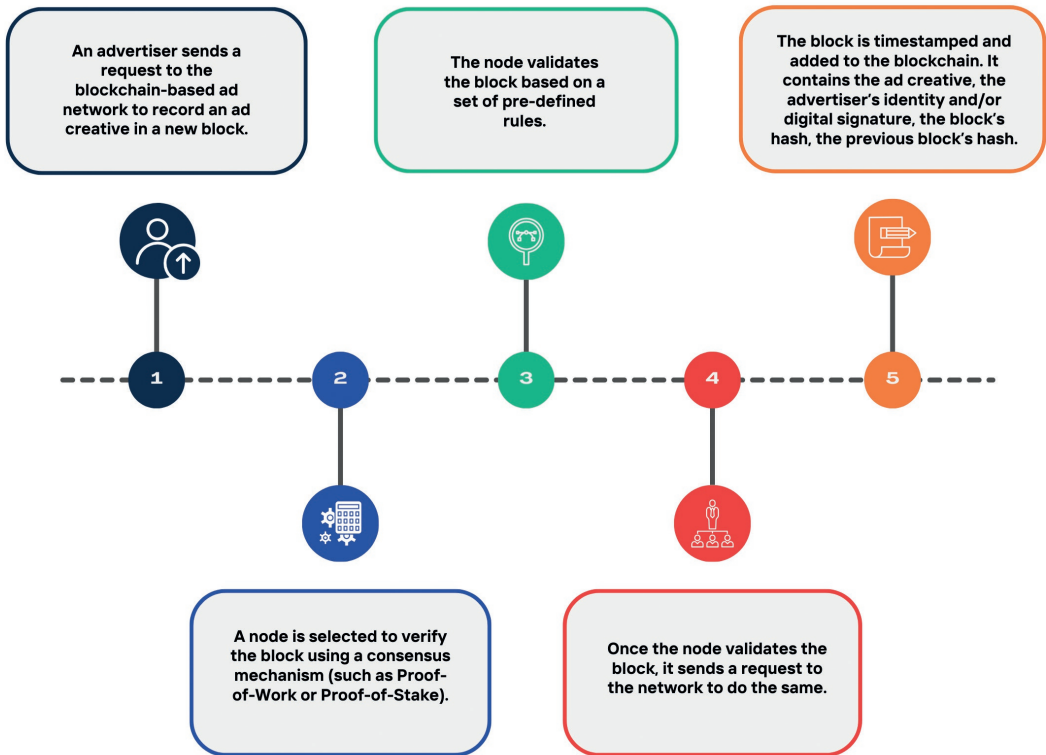
Deceptive advertising is also an issue which is unlikely to disappear anytime soon. Life in the digital age is characterised by ongoing and rapid technological developments, which are constantly reshaping society and bring with them both opportunities and challenges (OECD, 2019; UN High-level Panel on Digital Cooperation, 2019). Never has this been more evident than since the democratisation of access to generative artificial intelligence (AI) tools, such as *Midjourney*, *Dall-E* and *ChatGPT* (Costa et al., 2024; Euchner, 2023; Mollick & Euchner, 2023). Access to these tools has opened avenues for novel and potentially more interesting and effective forms of advertising (e.g., virtual influencers; Franke et al., 2023). However, it has also enabled fraudsters to create high-quality deceptive online content cheaply and with minimal effort (Proofpoint, 2024) – and advertising is no exception (Kietzmann et al., 2021). Furthermore, continuing technological improvements in this area have also made deceptive advertising content almost indistinguishable from the real thing (Köbis et al., 2021; Skiba & Lanzito, 2021). However, new technologies also bring new opportunities – and in this case, new opportunities to address malicious online content such as deceptive advertising. Therefore, an aim of this dissertation is to investigate how the opportunities created by novel technologies may be leveraged to minimise the negative consequences of deceptive advertising. One emerging technology that seems promising in this regard is blockchain.

## THE BLOCKCHAIN SOLUTION

In simple terms, blockchain is a digital ledger that records transactions (Charalambous & Damvakeraki, 2024). This data is recorded into blocks, which also store a timestamp of when and by whom the data was added, a unique cryptographic hash of the block, as well as the cryptographic hash of the previous block (Charalambous & Damvakeraki, 2024; Pärssinen et al., 2018; Pastor et al., 2021; Rejeb et al., 2020; Yun & Strycharz, 2023). In advertising, the data recorded on the blockchain could for instance be the ad itself, along with information on the advertiser or brand disseminating the ad, on which platforms it is being shown, and even to which types of consumers (Yun & Strycharz, 2023). The data itself can also be hashed using asymmetric cryptography, which allows others to check whether the data has been manipulated without revealing its actual contents (Pastor et al., 2021). This is particularly useful in instances when privacy is an issue; for example, if sensitive personal or financial information is being recorded, such as consumer data or ad-related financial transactions. By containing the hash of the previous block, each block is cryptographically connected, essentially forming a chain of blocks of data (Pärssinen et al., 2018; Rejeb et al., 2020). This blockchain of data – or the blockchain ledger – is stored in a network of computers (also called peers or nodes; Charalambous & Damvakeraki, 2024; Yun & Strycharz, 2023). In advertising, this network could consist of online advertising stakeholders, such as advertisers, publishers, and even consumers, creating a blockchain-based advertising network. Each node (or advertiser, publisher, consumer) holds a copy of the ledger and participates in validating information and keeping the (blockchain-based online advertising) network safe (Ruoti et al., 2019; Yun & Strycharz, 2023).

The process of recording information on a blockchain is visualised in Figure 1.1. Before a block is added to the blockchain, it must go through a verification process to ensure that it is valid, and adheres to the rules of the blockchain network (Charalambous & Damvakeraki, 2024). In a blockchain-based ad network, online advertising stakeholders could collectively decide on the rules for the network and what constitutes a valid record. To initiate the verification process, the individual or entity that wishes to record something on the blockchain (e.g., an advertiser wishing to record a new ad) must first send the request to the blockchain network (Charalambous & Damvakeraki, 2024). Then, a consensus mechanism is used to select a node (or stakeholder) to verify the block (Charalambous & Damvakeraki, 2024). In

**Figure 1.1** The process of recording information on a blockchain, adapted to the advertising context



a blockchain-based ad network, this could entail automatically verifying that the advertiser's identity is legitimate, or ensuring that the ad does not infringe upon another advertiser's intellectual property by cross-referencing the ad against a database of advertisements.

There are currently many consensus mechanisms implemented by different blockchains; however, Proof-of-Work (PoW) and Proof-of-Stake (PoS) are the most prominent ones (Pärssinen et al., 2018; Ruoti et al., 2019). While PoW relies on computational costs to ensure trust and eliminate the possibility of dishonest behaviour, PoS instead relies on economic incentives (Charalambous & Damvakeraki, 2024; Coinbase, n.d.; Ruoti et al., 2019). Once the node validates the block, it sends a notification to the other nodes to also check the validity of the block (Pärssinen et al., 2018; Yun & Strycharz, 2023). Finally, the block is timestamped and added to the blockchain, and an updated copy of the ledger is sent to all nodes (Yun & Strycharz, 2023).

In addition to consensus mechanisms which ensure that nodes in the blockchain network maintain its integrity, blockchain is characterised by other technical properties which likewise guarantee that the recorded data remains secure and effectively tamper-proof. The blockchain network is distributed, which means that all nodes in the network have an up-to-date copy of the blockchain ledger (Yun & Strycharz, 2023). This ensures that the blockchain is decentralised, meaning that there is no concentration of power in the hands of a single individual or entity (Ruoti et al., 2019; Yun & Strycharz, 2023). Cryptography allows users to verify that the recorded information has not been manipulated, as any changes to the data would alter its cryptographic hash, effectively breaking the chain (Charalambous & Damvakeraki, 2024). Immutability ensures that the data is recorded permanently and cannot be changed, deleted or overwritten (Ruoti et al., 2019). However, this does not mean that previously recorded information cannot be updated; rather, any subsequent updates must be recorded as new entries on the blockchain, which must go through the same validation procedure. This contributes to data integrity by providing a complete, transparent, and auditable history of records (Ruoti et al., 2019), showing when, where and by whom data was created and how it has changed over time (Yun & Strycharz, 2023).

The benefits of these features for maintaining content integrity in online advertising are beginning to be recognised by practitioners and researchers alike; although most of the research on this topic has been largely conceptual. For instance, recording all ad-related information on the blockchain can reduce the number of intermediaries, diminish ad fraud and wasted ad spend, increase trust and transparency in the real-time bidding process, give consumers greater control over their personal data, and help regulators identify any malpractices and crack down on deceptive content (Boukis, 2020; Pastor et al., 2021; PwC, 2019; Rejeb et al., 2020; Yun & Strycharz, 2023).

These are just some of the benefits that blockchain technology may offer to the online advertising ecosystem. However, the aim of this dissertation is to investigate, in particular, the potential of blockchain to address the issue of deceptive online advertising. In theory, blockchain could help to reduce the volume and impact of deceptive online advertising in the following way. A blockchain-based advertising network could be used to record all transactions that occur throughout the online advertising serving process along with related metadata, including its source, time and date of publication, and how it has changed over time (Pastor et al., 2021; Rejeb et al., 2020; Yun

& Strycharz, 2023). Before being admitted to the network, advertisers could legally be required to prove their digital identity, which could be verified either electronically (e.g., through OAuth 2.0; Ruoti et al., 2019) or by trustworthy regulatory, industry, or other organisations (Pastor et al., 2021; Yun & Strycharz, 2023). Every transaction or data recorded on the blockchain can be tied to a digital identity (e.g., an advertiser), and require a digital signature (Pastor et al., 2021; Yun & Strycharz, 2023). Since all transactions are recorded chronologically and are immutable (Ruoti et al., 2019), they would be auditable by all relevant stakeholders with access to the network, such as advertisers, publishers, consumers and regulators (Yun & Strycharz, 2023). Any suspicious transactions would be forever traceable to their associated digital identity (Yun & Strycharz, 2023). As a result, wrongdoers could be easily identified and held accountable (Pastor et al., 2021). Furthermore, consumers could use the information to historically check the integrity of the advertiser and make better-informed purchasing decisions. In turn, this would create a virtuous cycle, encouraging advertisers to act with integrity in order to maintain the reputation of their digital identity.

Outside the digital advertising environment, blockchain is already being widely implemented for safeguarding content integrity. For instance, one company utilises blockchain to help firms protect their intellectual property, prove ownership over content, and demonstrate how this content changed over time, in various industries including, journalism, finance, and creative design (WordProof, n.d.-b, n.d.-c, n.d.-a). Another company helps brands avoid greenwashing by validating sustainability claims, often using third-party certifications to ensure authenticity (Herzberg, 2015; Provenance, n.d.-b). These certifications are then recorded on the blockchain and can be integrated with e-commerce platforms to help consumers shop more sustainably. Furthermore, since 2024, the European Union has adopted new regulations mandating almost all goods sold across the union to be in possession of Digital Product Passports (DPPs; Publications Office of the European Union, 2024). The goal of these passports is to provide consumers with detailed and trustworthy information regarding a product's production processes, environmental impact, and disposal management. To comply with these requests, companies are already leveraging blockchain-based solutions (Aura Blockchain Consortium, 2023b), and the use of blockchain for such purposes is expected to increase in the future (Kumar, 2023; Vlachos & Damvakeraki, 2024). It is plausible that similar digital passports could eventually become a standard requirement in other areas, such as online advertising. Therefore,

this dissertation aims to empirically examine the opportunities of blockchain technology for also verifying the integrity of advertising content, and thereby its potential in helping to address deceptive advertising.

## **A WORD ON (CONCEPTUALISING) DECEPTIVE ADVERTISING**

Deceptive advertising not only contributes to the erosion of trust in online advertising (Attas, 1999) but can also be considered a type of ‘information disorder’ (e.g., disinformation; Capello, 2022; Wardle & Derakshan, 2017). Yet, prior academic research has failed to acknowledge it as such, choosing to concentrate mainly on information disorders related to politics, health, or natural disasters (Aïmeur et al., 2023; Muhammed T & Mathew, 2022). When advertising is examined in the context of information disorders, it is solely in terms of how advertising enables the spread of mis- and disinformation via fake news websites (Mills et al., 2019), or on the negative effects that fake news has on brand-consumer relationships (Di Domenico et al., 2021). This lack of recognition of deceptive advertising as a form of information disorder in its own right reflects a broader tendency to underestimate its significance as a societal issue.

Efforts to establish a universally accepted definition of deceptive advertising have been made in the past (viz., Hyman, 1990); however, the influence that digitalisation has had on the online advertising industry since then renders this definition obsolete. This means that currently there is no up-to-date, standardised definition of what deceptive advertising entails. As a result, research on deceptive advertising remains fragmented, with most studies focusing on one deceptive advertising practice (e.g., Fernandes et al., 2020; Pathak et al., 2019; Petrescu et al., 2022; Toncar & Fetscherin, 2012; Van Berlo & Bock, 2023), and little attention is being dedicated to the conceptualisation of deceptive advertising as a whole.

In contrast, research on disinformation has made several attempts to differentiate and classify various forms of fake news and other types of information disorders (e.g., Bakir & McStay, 2018; Ferreira et al., 2020; Kapantai et al., 2021; Tandoc Jr. et al., 2018). For instance, Tandoc Jr. and colleagues (2018) classified fake news types according to their “level of facticity” (defined by the authors as the extent to which the deceptive content derives

from facts) and “author’s immediate intention to deceive” into six categories: native advertising, propaganda, and photo manipulation (high facticity, high deception intention), news fabrication (low facticity, high deception intention), news satire (high facticity, low deception intention), and news parody (low facticity, low deception intention; p. 148). In a similar vein but with more granularity, Kapantai and colleagues (2021) developed a taxonomy of eleven disinformation types defined by three dimensions: motive (profit, ideological, psychological, unclear), facticity (mostly true, mostly false, completely false), and verifiability (yes or no). While these taxonomies often incorporate various forms of deceptive advertising practices (for example, native advertising as discussed by Tandoc Jr. et al., 2018; clickbait and fake reviews highlighted in Kapantai et al., 2021), none offer a comprehensive typology of all types of deceptive advertising practices, nor is that their aim.

**Table 1.1** Categorisation of deceptive advertising practices based on Ferreira et al.’s (2020) framework for brand-related fake news

<b>Name</b>	<b>Definition</b>	<b>Deceptive advertising types</b>	<b>Deceptive advertising example</b>
<i>The White Lie</i>	Fake news originates from inside the company and is based on genuine information or real events	Unsubstantiated or exaggerated claims (puffery)	Samsung exaggerating the water-resistance properties of their mobile phone products (Australian Competition and Consumer Commission, 2022)
<i>The Pinocchio</i>	Fake news originates from inside the company and contains fabricated information	False claims; fake celebrity endorsements (celeb-baits)	Volkswagen falsely claiming that its cars were environmentally friendly by using a “defeat device” to imitate low emissions (Fair, 2016)
<i>The Phantom</i>	Fake news originates from an actor external to the company and is based on genuine information or real events	Counterfeit ads; brand impersonation; phishing texts and emails	Phishing texts impersonating a legitimate UK government grant programme (Ramsey, 2022)
<i>The Victim</i>	Fake news originates from an actor external to the company and contains fabricated information	Fake customer reviews; get-rich-quick schemes	Fake product reviews on Amazon (Amazon Staff, 2024)

As an exception, Ferreira and colleagues (2020) have created a framework for classifying brand-related fake news. Similar to Tandoc Jr. et al. (2018), they classify such deceptive content along two dimensions: the level of deception (partly true or completely false) and the source of false information (internal or external to the company compromised in the deception). This framework could serve as the starting point for classifying deceptive advertising practices, and an effort in this direction can be found in Table 1.1. Nevertheless, this typology of false branded content is still in keeping with the focus on branded fake news, while a framework for classifying deceptive advertising is sorely lacking.

Fake news and the various information disorders described above can broadly be categorised under the umbrellas of disinformation, misinformation, and malinformation (Wardle & Derakshan, 2017). In the same vein, deceptive advertising can be differentiated according to its broader meaning, including fake, false, misleading, problematic or unfair advertising. However, no recent attempts have been made – either in academic research, industry literature, or legal texts – to identify and define the boundary conditions of these forms of deceptive advertising<sup>1</sup>. This makes it challenging to distinguish between various types of deceptive advertising, and thereby differentiate between practices that are illegal and those that are ‘merely’ annoying or unethical (Gardner, 1975).

By investigating the extent to which deceptive advertising is perceived as a significant issue, one of the aims of this dissertation is to shed light on deceptive advertising as a type of information disorder. Identifying and distinguishing between deceptive advertising practices that, while unethical, might be tolerable and those that are genuinely problematic and require addressing, is a crucial first step in this direction. As a first step, some attempts are made in the empirical chapters to differentiate between the various types of deceptive advertising. To this end, Chapter 3 explores deceptive advertising from the perspective of professionals in the online advertising industry, identifying its various manifestations, as well as its causes and subsequent impact. Later, Chapter 5 differentiates fake advertising as a sub-type of the broader umbrella of deceptive advertising and focuses on addressing this specific manifestation using blockchain technology.

---

1 As an exception, Zeng and colleagues (2021) classify advertising practices which consumers find problematic. However, many advertising practices identified in this work would arguably not fall under the aegis of deceptive advertising.

## MULTI-STAKEHOLDER PERSPECTIVE

As demonstrated earlier in this chapter, deceptive advertising has significant – and arguably the most detrimental – consequences for consumers. Therefore, it is crucial to consider their perspective when seeking and designing potential solutions to addressing this issue. However, it also affects brands and advertisers, who are faced with misuse of their intellectual property, erosion of consumer trust, damage to their reputation, legal fines, reduced market share, and negative word-of-mouth (Z. F. Chen & Cheng, 2020; Dawson, 2021; Grigsby, 2020; Song et al., 2019; Wu & Overton, 2021). The effects of deceptive advertising on publishers are less well-researched, however regulatory and industry literature suggests that publishers may also experience loss of audience trust and viewership, reputation damage and legal penalties (AdMonsters, 2023; Fair, 2023; Netherlands Enterprise Agency, n.d.; Swindle, 2013). In turn, regulators and consumer protection organisations come under increasing public pressure to protect consumers through laws and regulations (Gupta, 2023; Xu et al., 2022).

One way to approach the issue of deceptive advertising is as a type of commercial threat. From an individual perspective, the Protection Motivation Theory (PMT; Maddux & Rogers, 1983; Rogers, 1975) illustrates that in order to be empowered to protect oneself from a threat, an individual must first perceive the threat as severe and likely to affect them. However, given the pervasiveness of deceptive advertising and the complexity of the online advertising ecosystem, addressing this threat requires more than just motivating individuals. Rather, all ecosystem stakeholders must work together in order to do so effectively. Furthermore, although deceptive advertising has adverse negative consequences for all stakeholders in the online advertising ecosystem, it is unclear whether those stakeholders perceive it as a severe threat likely to affect them or their businesses. Therefore, this dissertation aims to investigate the issue of deceptive advertising and how it can be addressed not only from the perspective of the consumer, but from the perspective of all stakeholders in the online advertising industry.

In addition, this dissertation also examines the news media perspective on deceptive advertising. As framing (Entman, 1993) and agenda-setting (McCombs & Shaw, 1972; Tewksbury & Scheufele, 2019) theories argue, the media play an essential role in colouring individual perceptions of various issues, and in influencing what the public finds important. Empirical research

substantiates these claims in relation to public threat evaluations, indicating that media representations can influence individuals' perceptions and subsequent motivations to cope with threats in various contexts (Ritland & Rodriguez, 2014; Seo, 2021; Vacondio et al., 2021). This suggests that how the news media frame the issue of deceptive advertising (whether as a threat or otherwise) may have important implications for how other stakeholders in the online advertising ecosystem perceive deceptive advertising, and whether and how it should be addressed. Therefore, in order to obtain a complete picture of how deceptive advertising is perceived, and whether it is considered a severe enough threat in need of addressing, the news media perspective is also examined in addition to that of the online advertising ecosystem stakeholders.

## **DISSERTATION OUTLINE**

In sum, the primary objectives of this dissertation are to explore perceptions of deceptive advertising from a multi-stakeholder perspective and investigate whether, and how, blockchain technology can serve as a potential solution to this issue. To accomplish these aims, this dissertation takes an integrative theoretical approach to address the following research questions:

**RQ1.** To what extent is deceptive advertising perceived as a critical issue by consumers, the online advertising industry, and the news media?

**RQ2.** What role can blockchain technology play in addressing the issue of deceptive online advertising?

**RQ3.** How can blockchain-based solutions to deceptive online advertising be effectively communicated to consumers?

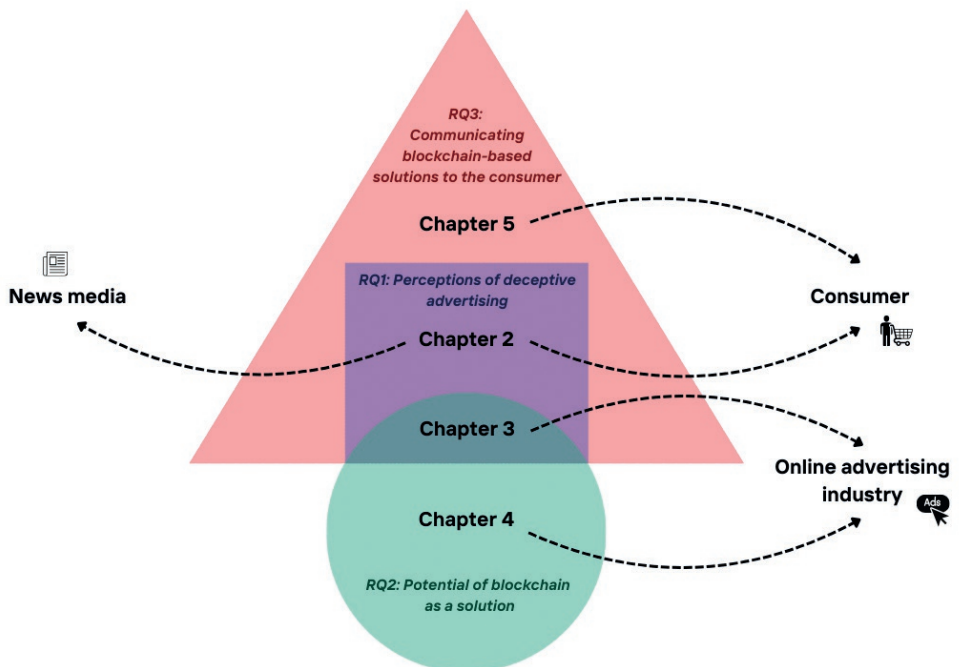
The dissertation consists of a general introduction chapter, four empirical chapters, and a summary and general discussion chapter. Each empirical chapter is also published – or has been submitted for publication – in an academic journal. Thus, every chapter is self-contained and can be read individually. As a result, the wording and tone of each chapter may differ: For instance, while the general introduction (Chapter 1) and general discussion (Chapter 6) use the collective term 'information disorder' to refer to disinformation, misinformation and malinformation, other chapters

use ‘disinformation’ as an umbrella term to refer to these three types of deceptive content. In total, five empirical studies were conducted – including an automated content analysis, a survey, an in-depth interview study, and two experiments. While Chapters 3 and 4 share the same interview dataset, Chapter 2 and 5 are multi-method studies based on multiple datasets.

A summary of each chapter is provided below. Each empirical chapter focuses either on one (Chapter 5) or multiple (Chapters 2, 3, and 4) stakeholder perspectives on deceptive online advertising. Figure 1.2 visualises how each chapter relates to one another, the research questions, and the three perspectives on deceptive advertising.

**Chapter 2** aims to explore how consumers perceive and cope with deceptive advertising as a commercial threat, as well as the factors that influence and shape their intentions to do so. In this chapter, Study 1 draws on framing (Entman, 1993) and agenda-setting (McCombs & Shaw, 1972) theories to

**Figure 1.2** Overview of the inter-relationships between chapters, research questions and perspectives



examine how deceptive advertising is portrayed in Dutch news media. To this end, it applies a mixed-method qualitative and computational methodology, Analysis of Topic Model Networks (ANTMN; D. Walter & Ophir, 2019). In turn, Study 2 utilises the PMT (Maddux & Rogers, 1983; Rogers, 1975) to explore consumers' intentions to protect themselves from deceptive advertising in a cross-sectional survey. It investigates the relationship between consumers' threat (perceived severity and susceptibility) and coping (self- and response efficacy) appraisals, and their intentions to take protective actions. It also introduces previous experience with deceptive advertising and media-based beliefs as internal and external knowledge sources respectively, into the model.

**Chapter 3** takes an industry perspective to investigate the various manifestations of deceptive advertising as a form of information disorder, and explore whether and how blockchain technology can be used to address this issue. For this purpose, it draws on the perspectives of nineteen online advertising professionals, blockchain experts, and regulation and consumer protection advisors. A grounded theory approach (Corbin & Strauss, 2015) is adopted to collect and analyse the data, drawing on the axial coding paradigm (Creswell, 2012) to organise the findings.

**Chapter 4** likewise adopts an industry perspective and – drawing on the expertise of the same nineteen professionals as in Chapter 3 – investigates the drivers and inhibitors of blockchain technology adoption in the online advertising ecosystem. The data collection and analysis again utilise the grounded theory methodology (Corbin & Strauss, 2015). The findings are analysed through the lens of the Interactive Communication Technology Adoption Model (ICTAM; Lin, 2003), and based on this, a framework for blockchain adoption in the online advertising ecosystem is developed.

Then, **Chapter 5** takes a consumer perspective to examine how blockchain technology can be used in practice to address fake advertising as one sub-type of advertising deception. To do so, this chapter draws on signalling theory (Connelly et al., 2011) and empirically tests the framework for labelling online content developed by Spradling and colleagues (2021). In two studies conducted in two different contexts (Instagram ads and Google search ads), this chapter investigates whether blockchain-based disclosures of advertising authenticity can increase consumer perceptions of ad and brand credibility and result in more positive attitudes. In this way, it takes an alternative

approach to addressing the issue of fake advertising by instead focusing on increasing the perceived credibility of genuine advertising.

Finally, **Chapter 6** contains a summary of the results and general discussion of this dissertation. It begins with a summary of the results as they pertain to the three research questions articulated in this chapter, continues with a discussion of the theoretical and practical implications, and ends with the limitations, suggestions for future research and a research agenda emanating from this work.