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Consumer Responses to AI-Generated Charitable Giving Ads

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ABSTRACT

Content created by employing artificial intelligence (AI) algorithms, also known as synthetic content, promises to radically change the advertising and marketing landscape in the coming decades, presumably for the better. It is fundamental for advertising and marketing scholars and practitioners to have solid knowledge of how synthetic content is perceived by consumers before widespread adoption is promoted. Across three experimental studies we tested how consumers in charitable giving contexts reacted to advertising messages featuring content generated by an AI neural network. We show that potential donors responded differently to children's faces when they knew they had been generated by AI. Study 1 established that awareness of the falsity of a face or its status as an AI-generated image has a negative impact on donation intentions. This negative impact is serially mediated by empathy and anticipatory guilt and empathy and emotion perception. Study 2 investigated several motives for employing AI-generated images and indicated that charities employing those images can benefit by making their ethical motives salient. Finally, Study 3 revealed that under extraordinary circumstances the use of AI images by charities is considered acceptable by consumers and is likely to lead to similar outcomes as the use of real images. Therefore, we recommend a cautious approach to the adoption of synthetic content.

Recent studies (Campbell et al. 2021; Whittaker et al. 2020) indicate that advertising messages will transition to an era dominated by artificial intelligence (AI) in the coming decades. Drivers of this evolutionary process are cost and convenience, among others. A company called Generated Photos offers a glimpse into what the future might hold for advertising content creation. As stated on the company's website, for a small fee an organization can purchase a humanlike AI-generated model that is indistinguishable from a real human model by consumers. Organizations can reuse the model as many times as they would like and hold exclusive rights to it, saving significant money on professional photographers, models, and the many aspects involved in photo shoots (e.g., makeup, logistics). As the example of Generated Photos indicates, it is difficult to discern what would dissuade companies from extensively adopting AI-generated content, particularly because of the return on investment (ROI) this advertising strategy promises. However, before rushing into AI-generated content adoption, organizations need to consider the effects of such content on consumers.

This article examines the effects of AI-generated (also known as synthetic) ads (Whittaker et al. 2020) on charity advertising, which can be defined as media messages delivered through mass media channels that seek to promote charities' goals (Grau 2014). We focus on charities for two reasons. First, advertising, as a percentage of the organization's budget, tends to be higher for profit-oriented companies compared to charities (*The NonProfit Times* 2016). Charity advertising budgets are generally small, and these organizations consequently might be especially motivated to employ affordable AI-generated content. Second, as the effective altruism movement (MacAskill 2015) and the giving multiplier initiative (Caviola and Greene 2022) show, societies embrace the prospect of widespread effectiveness when it comes to charity work (i.e., we all want charities to spend their

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resources as effectively as possible). If, for instance, AI-generated content is more (or less) effective at enticing donors than real content, then we want to establish that.

Given the central role of emotional appeals in charity advertising (Septianto and Tjiptono 2019), the question of whether synthetic ads are useful as a tool to promote charities' work is framed here as an inquiry into the effects of this type of advertising on consumer emotions that precede donation intentions. In other words, we aimed to understand consumers' emotional reactions when presented with these ads and their consequences for effective charity appeals. We did so by investigating how awareness of the falsity of synthetic content, when used on charitable giving advertising messages, impacts empathy and—via the empathic response—guilt and emotion perception. Even though research on emotion has flourished for several decades in many disciplines, beginning in the 1960s with the pioneering work of Paul Ekman and Silvan Tomkins (Ekman, Sorenson, and Friesen 1969; Pollak, Camras, and Cole 2019; Tomkins 1962), a recent call for further research on advertising identified emotions as a promising route (Poels and Dewitte 2019). Furthermore, a review of the charity advertising literature recommends more studies focused on structural relations between variables, especially considering the high frequency of factorial designs in this area (Wymer and Gross 2021).

The present research sits at the intersection of two advertising research fields: AI and consumer emotions. In addition to contributing to the literature in understudied areas, this study contributes to marketing and advertising research and practice in at least three other ways. First, this is one of the first studies to empirically study consumer reactions to synthetic content (Sands et al. 2022) and to define a new subdomain in consumer behavior research. Thus, this study is expected to be one of the first to open a new and underexplored area of consumer perceptions of synthetic content, contributing to the vitality of the advertising and marketing fields (MacInnis 2011). Synthetic content is likely to play a dominant role in the future of advertising and marketing, but little is known about how consumers perceive it, in part due to its novelty (Campbell et al. 2021; Sands et al. 2022). Second, we uncover some of the psychological mechanisms behind consumer responses to synthetic content by employing stimuli (faces) that are pervasive in marketing and advertising communications. Finally, we study boundary conditions and reveal some circumstances that are likely to positively affect perceptions of synthetic content. Based on these findings, we offer strategies that can be employed when using this type of content.

This article proceeds as follows. First, we discuss synthetic content and the motivation for our research by identifying the lacuna in the current advertising knowledge it intends to fill. Second, we develop our conceptual model based on several theoretical approaches to the phenomena of awareness of falsity, empathy, guilt, and emotion perception (Basil, Ridgway, and Basil 2008; Campbell et al. 2021). Later, in Study 1, we empirically test this model using stimuli generated by a neural network. After this, we introduce two additional studies motivated by the findings of Study 1. Finally, we discuss our results, note the limitations of our work, and suggest avenues for future research.

Literature Review

Artificial Intelligence and Content Creation

AI-generated media, also known as synthetic or generative media, is a type of content poised to revolutionize advertising and marketing in the coming years (Campbell et al. 2021). Synthetic media is the output of AI algorithms and represents a new stage in the evolution of content creation. Synthetic content can be classified into several categories based on diverse criteria, the most popular being deepfakes—synthetic media that result from the replacement of aspects of a media source by an AI algorithm which have the potential to deceive. A popular deepfake showcases a scene from *The Shining* with the face of Jim Carrey superimposed onto Jack Nicholson's character (https://www.youtube.com/watch?v=HG_NZpkttXE). By contrast, novel synthetic content can be exemplified by AI-generated faces of nonexistent individuals, as presented on the website https://thispersondoesnotexist.com/ (see Figure 1). These images are fake in the sense that they do not correspond to the image of any real person, but due to their shocking realism, they have the potential to

Figure 1. AI-generated face (left) versus digitally created face (right).

induce the belief that they do correspond to a real person.

The revolutionary character of synthetic content is partly explained by the manipulation possibilities offered by AI algorithms compared to digital or analog techniques. The difference is illustrated in Figure 1, where the face on the left is generated using digital technology and the one on the right is generated by the technology employed in this article—an AI neural network known as a generative adversarial network (GAN). Even though the digital image is realistic, it is still distinguishable from a real one, in contrast to the AI-generated image. Synthetic media has an edge over digital media in at least two other respects. The first is accessibility, or the democratization of content creation (Karnouskos 2020). Synthetic media is usually open source; people can freely access code and modify it according to their specific needs. Furthermore, training algorithms to create synthetic content does not require access to immense amounts of computing power, so it is affordable for individuals. The second is personalization and data integration. Through the application of big data, AI has enabled the practice of mass personalization of communication content, which results in better persuasion outcomes (Hermann 2021; Singaraju et al. 2022). In the case of charity advertising, algorithms can collect social media data and modify or replace images in real time to make a call to action more enticing (e.g., present potential donors with images that data suggest stand a better chance of engaging them).

Despite its great potential, empirical research on synthetic media is still in its infancy. A bibliographic analysis of the AI literature in business disciplines (Feng et al. 2021) points to the novelty of synthetic media or content as one reason for its limited study. Deepfakes, for example, only gained popularity in 2018, mainly as entertainment devices on social media platforms. Only a few conceptual models and corresponding research agendas have been suggested to guide the study of synthetic content in marketing and advertising (Campbell et al. 2021, 2022; Whittaker, Letheren, and Mulcahy 2021), yet empirical work is still missing. A pivotal goal of this article is to address the need for empirical research in this nascent field by studying consumer responses to synthetic content. We focus on consumer attitudes, emotions, and intentions triggered by hyperrealistic synthetic faces featured in ad templates designed to promote charities' causes.

Some research has been done on consumer reactions to AI in general, mostly when it is employed as a tool to influence, inform, and predict behavior through data-mining techniques (Davenport et al. 2020). Studies in this area have unveiled phenomena such as so-called algorithm aversion (Dietvorst, Simmons, and Massey 2015)—or people's supposedly negative bias toward interacting with algorithms in certain settings (Jussupow, Benbasat, and Heinzl 2020). However, even if this research is illuminating, it is not clear that it can account for the peculiarities that could be present in scenarios where content is created by AI or where users interact with synthetic media like deepfakes. For instance, Epstein et al. (2020) explored people's perceptions of AI agency after a portrait titled *Edmond the Belamy*, which was marketed as the first painting created by an AI algorithm, sold for $432,500. The financial success of the painting can hardly be explained by invoking algorithm aversion. To the best of our knowledge, to date, the only studies that have researched consumer responses to synthetic content have been carried out by Thomas and Fowler (2021) and Sands et al. (2022), who investigated people's responses to AI influencers of the likes of Lil Miquela. Some of their findings, which also run counter to the phenomenon of algorithm aversion, suggest that AI influencers are viewed as positively as real ones across several dimensions. Nonetheless, even if highly interesting, a significant limitation of the research by Thomas and Fowler (2021) is the fact that they used vignettes, and consumers were not exposed to the AI influencers themselves but rather were asked to imagine scenarios featuring them. By contrast, Sands et al. (2022) used synthetic content. In line with this, our study presents people with synthetic content.

Awareness of Falsity

This article follows the idea that a fundamental element of consumers' responses to synthetic images is awareness of falsity, which is interpreted as presented reality (Campbell et al. 2021). Consumers, in general, display negative attitudes toward falsity in ads (Held and Germelmann 2018). Perceived falsity leads to negative reactions by consumers, such as a defensive approach when processing information and distrust in communications, which constitute barriers to persuasive attempts (Boush, Friestad, and Wright 2015; Darke and Ritchie 2007). However, for this article, it is important to decouple awareness of falsity and manipulation intent. In for-profit environments, these elements frequently commingle. Companies that, for instance, exaggerate the benefits of using a product do so intentionally, knowing that their portrayal of the product is not accurate but is motivated by financial gain. Research has shown that consumer inferences of

manipulative intent frequently thwart advertisers' goals (Cotte, Coulter, and Moore 2005).

With synthetic content, it is crucial to realize that falsity might not lead to inferences of manipulative intent, especially when there is a reasonable expectation that the consumer will be able to detect the untrue elements of an ad. For example, "Malaria Must Die," a 2019 campaign led by a team of scientists, doctors, and activists, features a video of David Beckham speaking nine languages, including Hindi and Mandarin (https://www.youtube.com/watch?v=QiiSAvKJIHo). Even though it is not true that David Beckham speaks these languages, consumers are likely to know this. Given this expectation (and other elements, such as the fact that the intention of "Malaria Must Die" is not to deceive but to connect with its audience), consumers can perceive the falsity of the ad and simultaneously withhold any judgment regarding manipulative intent on the part of the advertiser.

We can distinguish at least two non–mutually exclusive routes that consumers might follow to ascertain the falsity of synthetic content. Given hyperrealistic content, consumers can rely on their background knowledge and infer that the content is not authentic. This route follows a top-down information-processing path because, in this case, perception is informed by personal factors such as knowledge (Gregory 1970; Pieters and Wedel 2004). We can call this the *inferential route* to falsity awareness. Conversely, consumers can base their falsity assessments on inherent features of the content, processing information in a bottom-up fashion with the stimulus itself determining their response (e.g., Gibson 2014; Pieters and Wedel 2004). We call this the *direct route* to falsity awareness. As technology progresses and synthetic content increasingly improves, consumers will likely come to rely more on the inferential route or technologies currently under development. Thanks to many efforts, such as the Deepfake Detection Challenge by Kaggle, a technological route to identifying falsity will eventually open.

This study separated manipulative intent and awareness falsity. Subjects who were informed about the falsity of an image (i.e., its status as a piece of AI-generated content) were also asked to imagine a scenario in which a charity was open about the fake nature of the image. This approach has the obvious benefit of differentiating between two different constructs, but it is also intended as a way of adding external validity to the study. If charities were to use these images, they would not likely do so deceptively (hiding their nature as AI generated). This would risk people's positive perceptions of charity organizations (Noble and Wixley 2014). However, dissociating falsity and manipulative intent forces us to consider alternative ways in which falsity might affect consumers. In the next section, we begin building a conceptual model, arguing that falsity affects empathy.

Empathy

Empathy is an equivocal term; it can be construed as simply sharing an emotion with another agent (Hoffman 1985) or as the emotion of sympathy (Batson 2014), among others. Here, we focus on empathy as a cognitive skill, particularly one that allows individuals to mentally occupy the place of others, or as the capacity of individuals to take up the first-person perspective of another agent. This is an advanced cognitive process, as it implies the suppression of an egocentric perspective, also known as perspective taking or cognitive empathy (Davis 2015). Importantly, the evaluation of empathy in this study was episodic and not dispositional; we assessed empathy as a situational reaction and not as a personality trait.

Empathy is a cognitive process susceptible to psychological distance. We tend to empathize more with close others than with distant others, with closeness being a function of many factors, such as spatiotemporal distance (Liberman, Trope, and Stephan 2007). This is why people find it extremely difficult to care about the environmental impacts of climate change on future humans (Pahl and Bauer 2013) or the plight of individuals in remote locations (Joseph and Xin 2012). Identifiability plays a role in psychological distance phenomena, with studies showing, for instance, that individuals are more willing to help children if they have seen pictures of them compared to a scenario where they have to rely exclusively on a description of their situation (Small and Loewenstein 2003). Presumably, identifiability facilitates the simulation process through which the individual imagines the target's disadvantaged position (Chambers and Davis 2012).

For this study, psychological distance was a crucial trait of empathy as a cognitive phenomenon. Throughout this study, the main stimuli were charity ads displaying faces generated by AI technology. These faces did not correspond to real persons despite their hyperrealism. We believed that once subjects were made aware of the falsity of AI-generated images, psychological distance would be created, leading to a reduced empathic response. Following the previous discussion, we felt that individuals would find it challenging to identify with the potential recipients of their help, as the AI-generated images they were to be presented with did not correspond to any of

them. We held that this effect would be present even if subjects knew that the images were representative of the situation or had features of real donation recipients and knew that a charity employing such images did not act with manipulative intent. Therefore, we hypothesized the following:

H1: Awareness of falsity (i.e., of synthetic images) will negatively impact empathy.

A large body of evidence links prosocial behavior and empathy conceptualized as situational perspective taking. While empathy as perspective taking is not invariably linked to prosocial behavior (e.g., Caruso, Epley, and Bazerman 2006; Galinsky et al. 2008), several studies have found a positive relationship between experiencing empathy and prosociality. For instance, studies have linked instructions to imagine the perspective of others to helping behaviors directed at them (e.g., Batson et al. 1989; Stocks, Lishner, and Decker 2009), including marginalized group members (Aberson and Haag 2007) or members of out-groups (Galinsky and Moskowitz 2000). A reduced empathic reaction in consumers as a result of awareness of the falsity of AI-generated images was expected to have negative consequences in terms of donation intentions (and subsequent behaviors). Here, we tested two possible mechanisms through which reduced empathy could harm donation intentions. First, we argue that reduced empathy results in weaker emotional reactions to ads, focusing our attention on guilt. Second, we claim that reduced empathy lowers the perceived emotional intensity of the faces displayed in ads. Both of these routes will lead to lower donation intentions.

Empathy and Guilt

Empathy has sometimes been shown to precede so-called moral emotions (Silfver et al. 2008). In a now-classical work, Haidt (2003) defined moral emotions as those that "respond to moral violations or that motivate moral behavior" (p. 853). Moral emotions can be grouped into two categories: other-condemning and self-conscious (Haidt 2003). Other-condemning emotions, such as anger or contempt, are directed at parties that are perceived as displaying unethical behavior, such as a business mistreating its employees or contaminating the environment, and can lead to punishing behaviors, such as negative word of mouth (Grappi, Romani, and Bagozzi 2013). Self-conscious emotions, such as guilt or shame, are directed at the self, and they typically constitute responses to instances of personal (in)action that are perceived negatively, particularly in the sense that they do not comply with the ethical or moral standards embraced by the individual.

Here, we focus on guilt, mainly because of the ubiquitous character and effectiveness of guilt appeals in charitable donation settings (Basil, Ridgway, and Basil 2006; Hibbert et al. 2007; Urbonavicius et al. 2019). The type of guilt discussed in this article is anticipatory: it is guilt that the subject anticipates feeling upon dismissing charitable giving ads and their calls to action. In other words, in this scenario, the main motivation for the subject to display positive attitudes toward or engagement in donation behavior would be to avoid the aversive consequences (feelings of guilt) of not doing so. Anticipatory guilt as a response to charity advertising has been found to be preceded by empathy (Basil, Ridgway, and Basil 2008). In this study, we also construed empathy as an antecedent of guilt and put forth two related hypotheses. First, we hypothesized that there is a positive relationship between empathy and guilt; that is, subjects who are better able to imagine themselves in the position of potential recipients of their help will experience more anticipatory guilt. In addition, following Basil, Ridgway, and Basil (2008), we believed that due to the unpleasantness of guilt, a positive relationship would be found between anticipatory guilt and donation intentions. Therefore, the more guilt an individual anticipates feeling, the more positive his or her attitude toward donating will be. Formally, we offer these two hypotheses:

H2: Empathy will positively impact anticipatory guilt.

H3: Anticipatory guilt will positively impact donation intentions.

We also expected awareness of falsity to affect donation intentions via the empathy–anticipatory guilt route (i.e., we expected to find a negative relationship between awareness of falsity and donation intentions serially mediated by empathy and guilt). Individuals aware of the falsity of AI images would then be less empathic, which would lead to less anticipatory guilt and lower donation intentions.

H4: The negative impact of awareness of falsity on donation intentions is serially mediated by empathy, then anticipatory guilt.

Empathy and Emotion Perception

Emotion perception can be defined as the "perception of emotion expressed by another person verbally, facially, with the body, or through a combination of these modalities" (Olderbak and Wilhelm 2017, p. 1093). Although emotions are usually expressed multimodally, we focus on the facial expressions of emotions and the corresponding capacity of consumers to perceive emotions expressed in this way. This focus can be justified on

several grounds. Charitable organizations' emotional appeals almost invariably use visual stimuli as a main component, such as human faces, especially of children (Cao and Jia 2017). Such extended practices by advertising and marketing practitioners align with research stating that humans are highly visual creatures (Kaas and Balaram 2014) who have developed the ability to extract large amounts of information from facial expressions (Tsao and Livingstone 2008).

Emotion perception is a fundamental process in charitable giving research (Tong et al. 2021). Many studies (Bagozzi and Moore 1994; Genevsky and Knutson 2015; Small and Verrochi 2009; Zemack-Rugar and Klucarova-Travani 2018) have attempted to establish what type of facial expression (e.g., sad versus happy) is more effective at encouraging donations, or at least effective at creating positive attitudes toward them, such as increasing donation intentions. Although findings in this particular respect are mixed, they demonstrate the effectiveness of portraying faces displaying emotions in charity ads as a tool to promote giving. In this study, we employed faces displaying emotions with a negative valence: sadness.

According to psychological models that specify the relationship between empathy and emotion perception (Mayer, Caruso, and Salovey 1999; Orchard et al. 2009), perceiving emotions in others is an effortful and not automatic process preceded by, among other emotions, empathy. In these models, emotion perceivers are portrayed as first going through a cognitive process whereby they occupy the perspectives of the agents expressing the emotion and empathizing with them. These models indicate a positive relationship between cognitive empathy and emotion perception. This implies that hindering or blocking individuals' capacity to exercise cognitive empathy has a deleterious effect on their emotion perception skills. As previously argued, we believe that AI-generated images constitute a barrier to individuals trying to empathize with advertising messages. Individuals who are presented with an ad portraying an AI-generated image and who are informed about the falsity of the image are subsequently expected to show a decreased capacity to perceive the emotion expressed by the face presented. Given the previous discussion, we hypothesized the following:

H5: Empathy will positively impact emotion perception.

H6: Emotion perception will positively impact donation intentions.

Finally, we also expected awareness of falsity to affect donation intentions via the alternative empathy–emotion perception route (i.e., we expected to find a negative relationship between awareness of falsity and donation intentions serially mediated by empathy and emotion perception). Individuals who are aware of the falsity of an image would then be less empathic, which would lead to a decreased capacity to perceive the emotion of the face portrayed in the ad and lower donation intentions.

H7: The negative impact of awareness of falsity on donation intentions is serially mediated by empathy, then emotion perception.

The conceptual model in Figure 2 depicts the hypothesized relationships (hypotheses 4 and 7 are the top and bottom paths, respectively, from awareness of falsity to donation intentions).

Methods

Ethics and Data Management

This study was preregistered at the Credibility Lab (https://credlab.wharton.upenn.edu/). We did not collect any personally identifiable information; therefore, this study does not fall under the General Data Protection Regulation (GDPR), which is one of the European Union's data privacy regulations (except for a pretest). An advanced ethical assessment of the study was conducted, and this research complies with the guidelines of the Finnish National Board on Research Integrity TENK. Code, supplementary statistical outputs, preregistration, and materials are accessible on the Open Science Framework platform at https://osf.io/fn9h4/. Participant recruitment was done through CloudResearch (Litman, Robinson, and Abberbock 2017), except for the first survey and pretest, which used Prolific panels (Palan and Schitter 2018).

AI Images

The images employed in this study are the product of a GAN trained on a data set of human faces. GANs are machine-learning algorithms that comprise two deep neural networks, a generator, and a discriminator that (through a competitive training process) create novel outputs. In general, the generator first creates a fake image of a person. This image and one from the data set serve as inputs for the discriminator, whose task is to distinguish one from the other (discriminate between the real and the fake image produced by the generator). The outcome of the process, or whether the discriminator was successful at telling the images apart, serves as feedback for subsequent iterations of the process. The generator increasingly improves its ability to produce fake images (images that are more difficult for

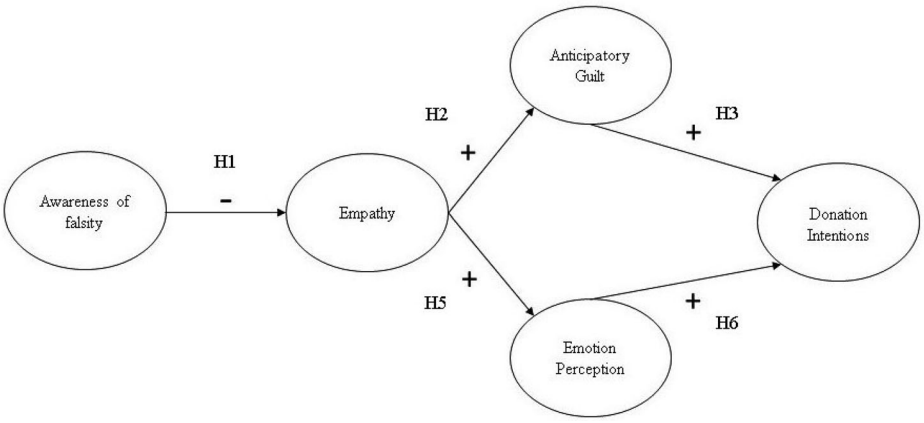

Figure 2. Conceptual model.

the discriminator to differentiate from real images), while the discriminator improves its ability to determine which is which. Images generated by the generator can then be used to create nonexistent images (in our case, the faces of nonexistent children).

There are three considerations when using GAN images. First, the images are novel, as GAN algorithms are different from others that are exclusively discriminative, such as facial recognition algorithms. Second, this novelty ensures that our study complied with the GDPR and the Biometric Information Privacy Act (BIPA), as GAN-generated images do not share the biometric properties of faces belonging to particular, real people. Third, we used a StyleGAN (Karras, Laine, and Aila 2019); there are several GAN algorithms (e.g., the Mean and Covariance Feature Matching GAN [McGan] and the Maximum Mean Discrepancy GAN [MMD GAN]) that utilize, among others, different objective functions to measure the distance between the generated and original data distributions. StyleGAN is a state-of-the-art technique that avoids several shortcomings of previous GAN algorithms and is thus ideal for generating novel outputs.

Preliminary Survey and Images Pretest

To ascertain the relevance of the present study, we carried out a short survey of attitudes toward AI images, employing a sample of individuals involved in charity work. The general attitude toward the images was positive. Those against the use of the images saw them as lacking "soul" and were worried about their potential to connect with donors. Those in favor thought the images would be effective because no real children would be exposed, which would protect their privacy and dignity (Steeves 2006). In addition, the subjects were not able to differentiate between AI-generated and real images. Therefore, consumers cannot follow what we previously called direct or indirect routes to establish content falsity. This result replicates previous findings (Köbis, Doležalová, and Soraperra 2021).

Study 1

Sample

The sample size was determined a priori (Soper 2021), per the following parameters: statistical power: 0.8; minimum anticipated effect size: 0.2; number of constructs: 5; number of observed variables: 12; and p value: 0.05. The recommended sample size for a structural model with those parameters was 376, and we successfully collected 464 responses. (The survey completion rate for the aware group was 43.3%; for the not-aware group, it was 69.7%.) After multivariate outliers were excluded, the remaining 458 participants were divided into two groups. The not-aware group consisted of 234 subjects (47.9% female), and the aware group comprised 224 subjects (50% female).

Procedures

To manipulate awareness of falsity, we divided the subjects into two groups: The participants in the aware group were presented with a charity ad that included an AI-generated image, and they were informed that the image was generated by AI technology (see Figure 3). The technology was briefly explained, and the subjects were asked to think of a charity using the image in a nonmanipulative fashion (i.e., not hiding the status of the image as AI generated). The participants in the not-aware group were not informed about the status of the image as AI generated. Filtering questions were employed in the questionnaire to test the subjects' comprehension of the technology. Several versions of the ad in Figure 3 were created corresponding to the different

Figure 3. Example of an ad shown to the aware group.

demographic profiles of the images presented. The subjects then responded to the same questionnaire. Table 1 shows the corresponding measures. To mitigate potential issues with the relevance of intention measures (Wood et al. 2016), we designed a drawing (Hock, Bagchi, and Anderson 2020). In addition to the survey compensation, participants who completed the survey entered a drawing, with the final amount paid to the winners depending on their willingness to donate, as measured by donation intention items. Participants were informed that the money deducted from the winners' prizes would be donated to a charity organization helping children in need (a similar cause to the one promoted in the ads). We made these donations once the winners of the drawing were selected, guided by the GiveWell website.

Equivalence of Groups

The aware and not-aware groups did not differ significantly in terms of gender (χ^2 (1, $N = 458$) = 0.132, $p > 0.05$), age (χ^2 (4, $N = 458$) = 1.651, $p > 0.05$), education (χ^2 (4, $N = 458$) = 3.667, $p > 0.05$), or income (χ^2 (3, $N = 458$) = 0.963, $p > 0.05$).

Preliminary Statistical Analysis

Mahalanobis distances were employed to identify multivariate outliers, with all outliers visually inspected before exclusion (Osborne and Overbay 2004). Exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were employed to establish the validity and reliability of the measures. In general, no validity or reliability issues were found (see the file containing statistical analyses on the aforementioned Open Science Framework platform at https://osf.io/fn9h4/). Table 1 displays the subscales and corresponding alphas for the items ($\alpha > 0.8$).

Results

Considering that no validity or reliability issues were found, subscale items were combined to obtain an overall score for each construct. Our serial–parallel mediation model was then tested using the SPSS PROCESS macro (version 4.0) by Hayes (2018). We chose the bootstrap confidence interval (CI) approach to mediation and ran Model 81 with 10,000 bootstrapping samples. (A dummy variable was coded to capture awareness of falsity: 0 = *Not aware*, 1 = *Aware*.) As manipulative intent differed between the two groups ($M_{\text{aware}} = 3.19$, $M_{\text{not aware}} = 2.62$, $p < 0.05$), which was something we did not expect, the model tested included this variable as a control.

Direct Paths

There was a negative relationship between awareness of falsity and empathy (= −0.38, SE = 0.14, $p < 0.05$), as stated in hypothesis 1. We also found a positive relation between empathy and anticipatory guilt (= 0.60, SE = 0.04, $p < 0.05$) and anticipatory guilt and donation intentions (= 0.61, SE = 0.04, $p < 0.05$), supporting hypotheses 2 and 3, respectively. Finally, there was a positive relationship between empathy and emotion perception (= 0.31, SE = 0.04, $p < 0.05$) and emotion perception and donation intention (= 0.12, SE = 0.04, $p < 0.05$), supporting hypotheses 5 and 6, respectively. Figure 4 provides a schematic representation of the direct effects.

Indirect Paths (Serial–Parallel Mediation)

Indirect effects are summarized in Table 2. According to the bootstrapping approach to mediation, an indirect effect is significant if zero is not part of the indirect effects' 95% bootstrap CIs (Hayes 2018). We then observed the two serially mediated relationships anticipated in this study, with the negative relationship between awareness of falsity and donation intentions serially mediated by (a) empathy and anticipatory guilt (Table 2, row 4), supporting hypothesis 4, and (b) empathy and emotion perception (Table 2, row 5), supporting hypothesis 7 (as can be seen in Table 2, empathy by itself also mediated this relationship). In both cases, for the direct and indirect effects, we controlled for manipulative intent. Both direct and indirect effects were also significant when outliers were included in the analysis.

Discussion

Study 1 shows that awareness of falsity harms donation intentions and that this effect is the result of lower

Table 1. Constructs and item measures.

Construct	Item	α
Cognitive empathy (Basil, Ridgway, and Basil 2008; Davis 1980)	Emp1: When seeing the ad, I put myself in the shoes of a needy child.	S1: 0.91
	Emp2: After seeing the ad, I imagine what it would feel like to be a needy child.	S2: 0.94
	Emp3: After seeing the ad, I can more easily see things from the needy child's point of view.	
Anticipatory guilt (Basil, Ridgway, and Basil 2008)	Gui1: I would feel guilty if I did not make a donation after seeing this ad.	S1: 0.96
	Gui2: I would feel sorry if I did not make a donation after seeing this ad.	
	Gui3: I would feel regretful if I did not make a donation after seeing this ad.	
Emotion perception (Garrido and Prada 2017)	Emo1: The face portrayed in the ad is expressing sadness.	S1: 0.83
	Emo2: The face portrayed in the ad is expressing an emotion with a negative valence (that is, unpleasant).	
Donation intention (Kim 2014)	Int1: After being exposed to the ad, I am willing to make a donation.	S1: 0.97
	Int2: After seeing this ad, I would like to make a donation.	S2: 0.97 S3: 0.97
Manipulative intent (Campbell 1995; Cotte, Coulter, and Moore 2005)	Man1: I didn't mind this ad; it tried to be persuasive without being excessively manipulative.	S1: 0.88
	Man2: The advertiser tried to manipulate the audience in ways I do not like.	S2: 0.89
	Man3: I was annoyed by this ad because it seemed to be trying to inappropriately manage or control the consumer audience.	S3: 0.89
Attitude toward the ad (Goldsmith, Lafferty, and Newell 2000)	AtAd1: *Bad/Good* AtAd2: *Unfavorable/Favorable* AtAd3: *Unpleasant/Pleasant*	S2: 0.94
Attitude toward the use of images (Goldsmith, Lafferty, and Newell 2000)	AtIm1: *Bad/Good* AtIm2: *Favorable/Unfavorable*	S2: 0.97
Attitude toward charity (Spears and Singh 2004)	AtBr1: *Bad/Good* AtBr2: *Unappealing/Appealing* AtBr3: *Unfavorable/Favorable* AtBr4: *Unlikeable/Likeable*	S2: 0.97 S3: 0.96

Note. S1 = Study 1; S2 = Study 2; S3 = Study 3.

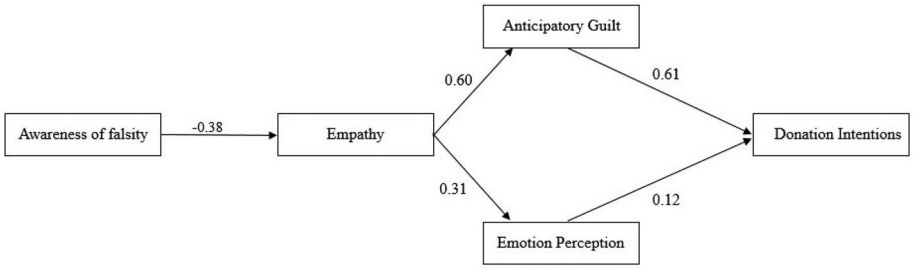

Figure 4. Statistical model with nonstandardized regression coefficients (β).

Table 2. Indirect effects, effect size, and bootstrapping confidence interval.

Indirect Effects	Effect	Boot SE	Boot 95% CI
Awareness → Empathy → Donation Intention	−0.0718	0.0335	[−0.1455, −0.160]
Awareness → Anticipatory Guilt → Donation Intention	−0.0066	0.084	[−0.1678, 0.1598]
Awareness → Emotion Perception → Donation Intention	0.0139	0.0177	[−0.0184, 0.0539]
Awareness → Empathy → Anticipatory Guilt → Donation Intention	−0.1444	0.0563	[−0.2605, −0.0390]
Awareness → Empathy → Emotion Perception → Donation Intention	−0.0157	0.0081	[−0.0337, −0.0025]

Note. CI = confidence interval; SE = standard error.

empathy. In addition, via this path, there is (a) less anticipatory guilt and (b) a decrease in emotion perception. An additional path goes from empathy directly to donation intentions (mediation but not serial). In general, Study 1 suggests that authentic faces are a safer approach for charities and that the use of AI-generated faces in advertising messages, even with disclosures, is likely to harm their endeavors.

Study 2

In Study 1, to avoid giving the impression of manipulative intent, subjects were made aware of the AI-generated status of the image, told that the use of the image was not intended to deceive, and asked to imagine a charity using the images for good reasons. A fundamental question that remains, however, is whether awareness of the falsity of an image interacts with the perceived motives for using it (i.e., whether the type of rationale a charity can provide for using an image moderates the relationship between awareness of falsity and outcome variables). If a moderation relationship exists, making certain motives for using AI images salient could cancel out the negative effect of awareness of falsity established in Study 1. Even though motives are heterogeneous, a comprehensive and useful taxonomy offered by value theory is that between intrinsic and extrinsic motives, or between ethical and instrumental motives (Amengual and Apfelbaum 2021; Rønnow-Rasmussen 2015). When using an AI image, a charity can make its intrinsic motives (claiming that its use of the image responds to ethical considerations), its extrinsic motives (claiming that its use of the image is instrumental, or a means to achieve its ends), both, or none salient. The question of whether an interaction exists between these motives and several outcome variables that are fundamental for charities is tested in Study 2.

Sample

GPower 3.1 was employed to calculate the sample size with the following parameters: effect size = 0.15; $\alpha = 0.05$; $1 - \square = 0.8$; numerator $df = 3$; and number of groups = 8. The recommended sample size was 489. A total of 555 responses were collected (58.1% female), with 548 usable (after the exclusion of multivariate outliers).

Procedure

We employed a 2 (aware versus not aware) × 4 (motive: absent versus ethical versus instrumental versus both) between-subjects design. We created scenarios to make the motives behind the use of the images salient. In the absent condition, subjects were exposed to two versions of the ad: one in which the AI-generated status of the image was disclosed and one in which it was not. In the ethical condition, in addition to the absence or presence of the disclosure, subjects were told that the charity deeply cared about ethical standards and had either obtained proper consent to use the image (for those not aware of its AI status) or was using the image to protect real children's privacy (for those aware of its AI status). In the instrumental condition, participants were told that the charity was using the image as a means to achieve its goal of either enticing donors (for those not aware of the AI status of the image) or saving valuable resources in marketing campaigns (for those aware of the AI status of the image). Finally, in the both condition, participants were presented with charities employing both ethical and instrumental motives in their decision-making process (e.g., a charity using an AI image to protect children's privacy and save resources in marketing campaigns). Manipulation checks were presented at the end of the survey, with subjects successfully remembering the status of the image as AI or not (98%) and the justifications provided by the charity for using it (92%).

Measures

We employed some of the same measures as in Study 1 but added three semantic differential scales to investigate attitudes toward the ad, the charity, and the use of the images by the charity (refer to Table 2), as well as manipulation checks.

Results

We performed a general linear model, particularly a multivariate analysis of covariance (MANCOVA). The interaction effect between awareness of falsity and type of motive on the combined dependent variables was not significant (F (15, 1477.3) = 1.387, $p > 0.05$, Wilks's $\Lambda = 0.962$, $\eta_p^2 = 0.013$), but the main effects were significant for awareness of falsity (F (5, 535) = 3.658, $p < 0.05$, Wilks's $\Lambda = 0.967$, $\eta_p^2 = 0.033$) and marginally significant for the type of motive (F (15, 1477.3) = 1.498, $p < 0.1$, Wilks's $\Lambda = 0.959$, $\eta_p^2 = 0.014$). We followed the MANCOVA with a post hoc test, particularly multiple pairwise comparisons employing Bonferroni's method. The estimated marginal means' differences are shown in Table 3. We employed ggplot2 to graph these means (see Figure 5).

Discussion

Although the effect of awareness of falsity on the dependent variables was not found to be moderated by the type of motive, the main effects indicated several important patterns. First, awareness of falsity has a negative effect on outcome variables independent of the type of motive. Second, making instrumental motives

Table 3. Main effects of awareness and type of motive.

	Awareness	Type of Motive					
Dependent Variable	No-Yes	Abs-Eth	Abs-Ins	Abs-Both	Eth-Ins	Eth-Both	Ins-Both
Empathy	**0.394**	0.059	*0.418*	0.295	0.36	0.236	−0.124
Intention	**0.281**	−0.27	**0.531**	0.408	**0.558**	0.435	−0.124
AtAd	**0.31**	−0.108	0.138	0.139	0.246	0.247	0.001
AtBr	**0.255**	−0.067	0.222	0.213	0.289	0.281	−0.009
AtIm	*0.193*	0.022	0.232	0.08	0.209	0.057	−0.152

Note. Estimated marginal means' differences. Significant differences are in bold and marginally significant ($p < 0.1$) in italics. abs = absent; eth = ethical; ins = instrumental; AtAd = attitude toward the ad; AtBr = attitude toward the charity; AtIm = attitude toward the images.

salient has a negative effect on outcome variables, and the small differences in estimated marginal means (refer to the far-right column of Table 3) indicate that this is true even if instrumental motives are mentioned alongside ethical motives. Overall, talk of instrumental motives, whether in combination with ethical motives or on their own, was found to be harmful for both the aware and not-aware conditions. Even the absent motive condition outperformed the two conditions in which instrumental motives were mentioned. This indicates that, for instance, a charity will likely do better by simply disclosing the AI status of an image compared with a condition where it (a) discloses the status of the image and (b) offers some kind of instrumental rationale for using this type of image—whether by itself or in combination with ethical motives (e.g., more effective allocation of its budget and protection of privacy). The absent condition was slightly outperformed by the ethical condition. Although these last differences were not statistically significant, the results indicate that the safest approach for a charity employing an AI image is to make ethical motives salient (even though, for most variables, this is not as effective as using real images and making ethical motives salient). In such cases, a disclosure such as "AI-generated image. Help us protect children's privacy" is a good idea if AI-generated images are to be used.

Study 3

Study 2 tested several motives that charities can make salient to use an image. We found no interaction between awareness of falsity and type of motive. However, external factors might compel charities to use AI images. In Study 3, we removed the element of choice implicit in Study 2 and asked whether consumers found the use of AI images acceptable under circumstances that might leave charities with no alternative. We focused on disasters, as they require an urgent response and make charities' work (including the process of obtaining real images) more challenging. Notably, research has found that the psychology of charitable giving is different for disasters (Zagefka and James 2015).

Sample

GPower 3.1 was employed to calculate the sample size with the following parameters: effect size = 0.1; $\alpha = 0.05$; $1 - \square = 0.95$; number of groups = 4; and number of predictors = 2. The recommended sample size was 96. Of the 112 responses collected, all were usable (i.e., there were no multivariate outliers).

Procedure

We employed a 2 (aware versus not aware) × 2 (disaster versus no disaster) between-subjects design. The disaster condition mentioned a charity that was either able (for those not made aware of the AI-generated status of the image) or unable (for those made aware of the AI-generated status of the image) to obtain a photograph of children from a region hit by a natural disaster. The no-disaster condition mentioned a charity working on educational programs. Manipulation checks were presented at the end of the survey, with subjects successfully remembering the status of the image as AI or not (98%) and the type of work done by the charity (disaster relief or other) (85%).

Measures

Based on previous studies, we decided to focus on what we considered to be the two main outcome variables: donation intentions and attitude toward the charity.

Results

We performed a general linear model, particularly a MANCOVA. The interaction effect between awareness of falsity and disaster context on the combined dependent variables was significant (F (2, 106) = 2.478, $p < 0.05$, Wilks's $\Lambda = 0.955$, $\eta_p^2 = 0.45$). We then

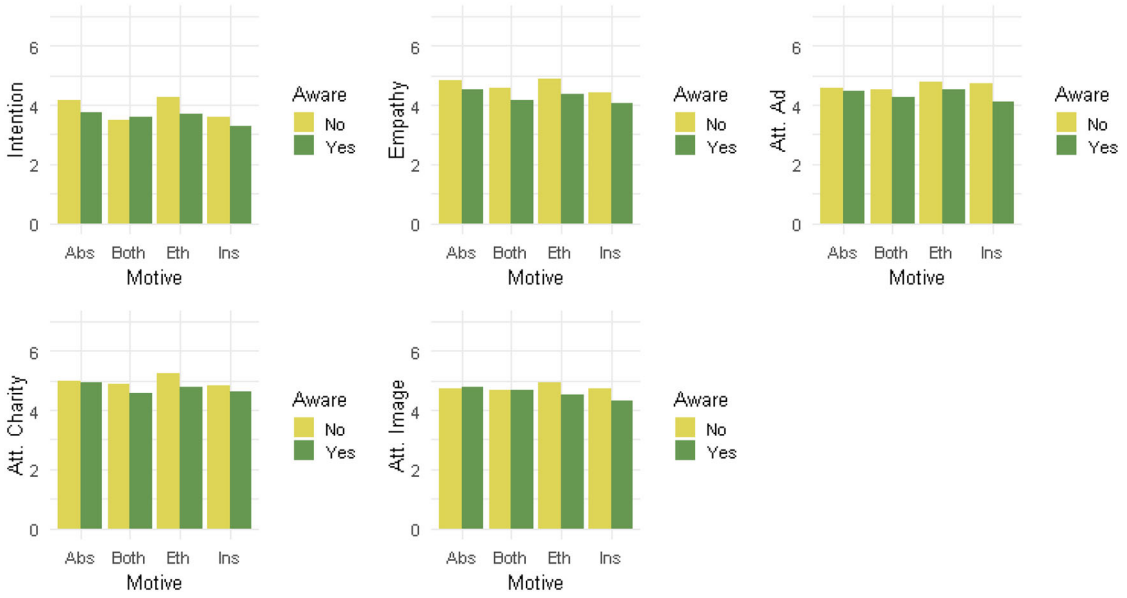

Figure 5. Bar plots of estimated marginal means for the dependent variables.

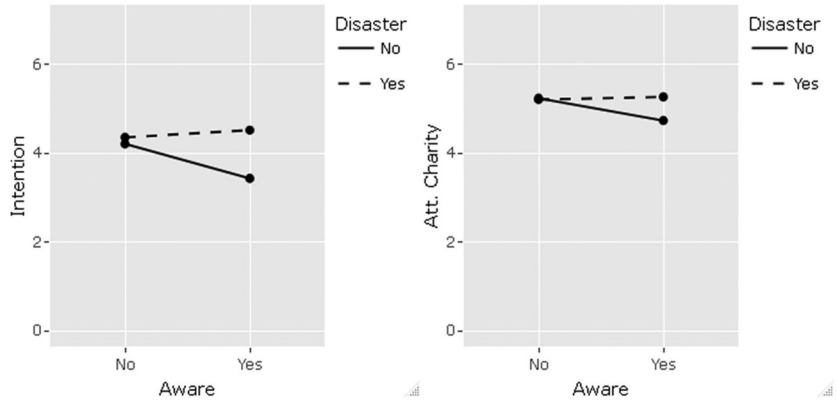

Figure 6. Interaction between awareness of falsity and the disaster context in predicting donation intention (left) and attitude toward the charity (right).

decided to perform individual analyses of covariance (ANCOVAs) on each dependent variable (donation intention and attitude toward the charity, controlling for manipulative intent). For donation intention, the interaction between awareness of falsity and the disaster context (F (1, 107) = 4.365, $p < 0.05$, $\eta_p^2 = 0.039$) was significant, as were the main effect of awareness of falsity (F (1, 107) = 5.516, $p < 0.05$, $\eta_p^2 = 0.016$) and the disaster context (F (1, 107) = 10.793, $p < 0.05$, $\eta_p^2 = 0.072$). For attitude toward the charity, the interaction between awareness of falsity and disaster condition was marginally significant (F (1, 107) = 2.737, $p = 0.1$, $\eta_p^2 = 0.024$), and the main effect of awareness of falsity (F (1, 107) = 9.230, $p < 0.05$, $\eta_p^2 = 0.015$) and the disaster context (F (1, 107) = 5.193, $p < 0.05$, $\eta_p^2 = 0.023$) were both significant. See Figure 6 for interaction plots.

Discussion

The significant (donation intention) and marginally significant (attitude toward the charity) interactions indicate that, under certain circumstances, consumer attitudes toward the charity and donation intentions when faced with an ad featuring an AI image are positive. Replicating the results of the first two studies but in a novel setting (a charity working on educational programs), we found that awareness of falsity had a negative impact on donation intentions and attitude toward the charity in a nonemergency context (solid lines in Figure 2). However, the difference between the aware and not-aware groups was mostly canceled when a disaster context was employed, and it was salient for consumers that the charity employing

AI-generated images had difficulties obtaining real images.

Discussion

Theoretical Implications

Since the 1970s, digital technologies have radically changed marketing and advertising (Kamal 2016). Therefore, it is realistic to claim that the next revolution in marketing and advertising has already begun, with AI algorithms increasingly occupying a pivotal role in marketing and advertising efforts (Qin and Jiang 2019). Content creation is an area in which AI algorithms have begun to excel, both in their capabilities and their accessibility: GPT3, a deep-learning algorithm, recently wrote a piece for *The Guardian* (GPT3 2020), and AI generators are now easily accessible online. "Blue Jeans and Bloody Tears," one of the first songs created by an AI algorithm, debuted in 2019, and AI music creation has now become popular among music producers (Short 2021); and paintings similar to *Edmond the Belamy*, which was created in 2018 as the first AI artwork, can now be created by hundreds of apps available to the public (James 2021). Given the accessibility, cost effectiveness, quality, diversity, and copyright friendliness of AI-created (or synthetic) content, it is difficult to envisage future scenarios where it is *not* pervasive. Synthetic content is here to stay, and it is only reasonable to expect its exponential adoption by marketing and advertising practitioners.

Researchers have remained mostly silent on the topic of how synthetic content is perceived by consumers. Recent conceptual models have been proposed to approach the question (Campbell et al. 2021; Whittaker, Letheren, and Mulcahy 2021), but empirical studies are only beginning to emerge. Considering the likelihood of synthetic content becoming mainstream in marketing and advertising communications, the present study informs a crucial literature gap that researchers need to address and serves as a prelude to more work in the area of consumer reactions to synthetic ads.

In line with the theoretical framework of psychological distance, our findings suggest that being aware of the AI-created status of a child's image in a charitable-giving advertising context has a negative impact on consumers' empathic responses when presented with such ads. In turn, this decreased empathic reaction translates into less guilt and less perceived sadness, which results in lower donation intentions. Importantly, this finding is robust when controlling for manipulative intent. In other words, even if charities use these images and are open about their AI-created status, they should expect consumers to react with less empathy and, via the guilt and emotion perception paths, display lower donation intentions.

However, as shown in Studies 2 and 3, not every use of synthetic content in charitable giving contexts is comparable to others. In Study 2, we investigated how offering motives for using AI images impacts consumers' reactions to ads featuring them. Similarly, in Study 3, we tested whether the use of synthetic images in emergency situations affects several outcome variables relevant to charities. Both studies supported the proposition that responses to ads featuring synthetic images are malleable. In particular, we found that (a) providing consumers with ethical motives for using an AI image (Study 2) or (b) using the image as a last resort (in an emergency situation where no alternative seems available) leads to positive outcomes; however, only (b) leads to outcomes similar to those associated with the use of real images. These results align with a wealth of research that has documented people's tendency to define themselves as ethical agents (Ellemers et al. 2019) and the fact that psychological processes pertaining to charitable giving function differently during disasters (Zagefka and James 2015).

Practical Implications

The main objective of this study was to understand consumer reactions to synthetic content when used as part of charitable advertising. Overall, our results suggest that the a priori benefits of using synthetic content must be weighed against the potential pitfalls resulting from that use. Innovators and early adopters face the risks associated with the rapid appropriation of new technology (Rogers 2010); and, as we have seen, synthetic content can have deleterious effects and run against charities' goals if used inappropriately.

Charities faced with the decision of whether to employ synthetic content can benefit from disclosures that also make the ethical motives behind the use of the images salient (e.g., "AI-generated image. We care about children's privacy"). Even if this is still less effective than using real images, it is, in general, (a) better than using only the disclosure of the AI-generated status by itself and (b) much better than making instrumental motives for using the images salient. In addition, our findings indicate that use of synthetic images can be as effective as use of real images under certain circumstances, particularly when charities are faced with a situation that makes the use of real images impractical.

For charities not working on disaster relief, even if synthetic content can offer several benefits (e.g., savings in terms of time and budget), the benefits must be carefully weighed against the negative impact that such content can have on important outcomes, such as donation intentions or charity reputation. In these scenarios, charities are advised to wait to adopt synthetic content. Before adopting the trend of synthetic content, charities should closely follow any potential changes in public attitudes toward AI technology (Vasiljeva, Kreituss, and Lulle 2021), introduce it slowly (if at all), and monitor consumer data to ascertain its effectiveness. As we have shown, content authenticity is strongly advised at this time.

Future Research

Ideally, practitioners' use of synthetic content should be guided and informed by the strong theoretical foundations developed in academia. Otherwise, as our research shows, synthetic content use can potentially inflict damage on organizations. Researchers should extend our work and help define the conditions under which synthetic content use is a safe venture for organizations. Due to its novelty, the field of consumer reactions to synthetic content offers an oversupply of research possibilities.

The scope of the present research was the not-for-profit context of charity organizations. Although our conceptual model is not expected to be applicable in for-profit settings, some of its constructs and the theoretical paradigm on which it is based might be relevant to those contexts. Here, we list some valuable research questions that scholars could explore in this respect. First, we found that manipulative intent was significantly higher for individuals who knew they were being presented with AI images. A for-profit motive could worsen this, with consumers aware of the synthetic nature of content reacting defensively toward it (Cotte, Coulter, and Moore 2005; Darke and Ritchie 2007). Second, research suggests that psychological distance is related not only to empathy but also to constructs such as trust, with information sources that are perceived as closer being more trusted than those who are not (Sands et al. 2022). Could the use of synthetic content in marketing and advertising communications become a barrier to achieving a trusting relationship between consumers and companies? A case in point is Synthesia (https://www.synthesia.io/), a platform that offers companies the ability to create videos featuring AI avatars, "saving up to 80% of their time and budget." An inescapable question is whether companies can expect a good ROI from the use of such avatars to promote their products, despite the time and budget savings in marketing and advertising campaigns. AI avatars could significantly hurt pivotal outcomes, such as consumer trust, and increase perceptions of manipulative intent. In addition, the use of AI avatars or images could significantly decrease the effectiveness of emotional appeals, as our findings on emotion perception suggest. An appeal might not be as effective if consumers know that the person they see smiling in an ad is not a real person but a Synthesia avatar. These are empirical questions worth exploring.

There are two additional avenues for future research that are relevant to both the not-for-profit and for-profit contexts. The first is moderation relationships. Consumers with certain personality traits, holding certain beliefs, or belonging to certain demographic groups could react differently to the inherent falsity of synthetic ads. Determining which consumers are likelier to react negatively to synthetic ads can protect organizations against the misuse of synthetic ads. Second, longitudinal studies can be undertaken to ascertain how public attitudes toward synthetic ads change as general adoption grows. The phenomenon of adoption by marketing and advertising practitioners and by the general public, which can be approached using models such as the technology acceptance model and its subsequent extensions (Davis 1989; Venkatesh et al. 2003), can eventually normalize synthetic content and lead to consumer indifference toward its falsity. Establishing whether the artificial character of synthetic content might eventually become irrelevant for consumers—and, if so, when—can help conservative organizations better time their transition to such content.

Limitations

We would like to note the limitations of this research. The first is that we used images exclusively. Even though charities use images of children on a regular basis, other media, particularly videos, are an important part of their campaigns. A GAN could also be employed to superimpose fake faces; however, creating novel, credible videos resembling those employed by charities is still beyond the capabilities of these technologies. Second, even though we went to great lengths to ensure data quality by following appropriate recommendations (Aguinis, Villamor, and Ramani 2021), and data collected online is, for the most part, reliable (Kees et al. 2017), it is important that future studies attempt a replication of results with different samples. Finally, even though we followed previous studies (Ahmed 2021; Sands et al. 2022) and manipulated awareness of falsity using

disclosure labels, consumer skepticism regarding the fake nature of the images might remain due to their hyperrealism. Such skepticism could be particularly marked among consumer segments not familiar with new technologies. Future studies could employ more detailed explanations of AI technology and the remarkably real content outputs it can produce.

Conflict of Interest Statement

The authors declare that there are no conflicts of interest.

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