The role of strategic communication in facing paracrisis: a multiple case approach in the lab-grown meat industry

Ginevra Testa - Luca Giraldi - Simone Splendiani

Abstract

Framing of the research: The article focuses on the growing cultured meat industry and the strategic communication used in crisis contexts with a high media impact.

Purpose of the paper: This article explores the strategic role that communication can play in preventing crises and minimising their negative effects in the cultured meat industry.

Methodology: Using an exploratory methodology, the article analyses the communication strategies adopted by four leading companies in the cultured meat industry over one year on the social media Facebook through a content analysis with NVivo 14 software.

Findings: The results of the study show that the strategies most used by the four companies analysed, namely, 'reform', 'supportive PR', and 'revision' strategies, were able to create good engagement with the public and stimulate optimism in public comments. These strategies emphasised the companies' commitment to leading the challenges of this sector, educating the public, conveying transparent information, and creating synergies to broaden the audience.

Research limitations: The limitations of this research, which future studies can overcome, are the small sample size, the subjectivity typical of content analysis, and the possibility of exploring multiple social media platforms to understand differences among consumer generations.

Practical implications: The study provides many implications for managers and professionals in monitoring online debate and discussion to contain the negative narratives spread by detractors and develop communication strategies to highlight the positive contributions made by the company's activities.

Originality of the paper: This study's originality lies in its appreciation of strategic communication's central and multifaceted role in the innovative cultivated meat industry. Its essential role in the pre-crisis phase to monitor the external environment and identify influential stakeholders, that is, the public, is emphasised.

Key words: *strategic communication; communication strategy; corporate communication paracrisis; social media; Facebook; cultured meat industry.*

1. Introduction

This study examines the ongoing debate surrounding the emerging cultured meat industry, which involves the production of lab-grown

or cell-based meat from animal cells in a laboratory setting (Goodwin and Shoulders, 2013; Hopkins and Dacey, 2008). The global turnover of companies that produce cultured meat has seen notable growth in recent years. In 2022, the cultured meat market was valued at approximately $246.9 million (GVR, 2023). In 2023, the value increased to $665 million, indicating the rapid development of the industry (GMI, 2023). According to the Cultured Meat Market - A Global and Regional Analysis, 2024-2033, the cultured meat market is expected to be valued at $1.1548 billion in 2024. It will reach an estimated $3.8106 billion by 2033, supported by a robust compound annual growth rate (CAGR) of 14.19% from 2024 to 2033 (Research and Markets, 2024).

Cultured meat has the potential to revolutionise the meat industry and has prompted growing debate regarding its potential advantages and drawbacks (Treich, 2021). Advocates argue that it is more sustainable, more ethical, and healthier than traditional meat, given its significant reduction in gas emissions and water pollution. Moreover, it also improves animal welfare and offers high-quality product food (Beeker *et al.*, 2017; Bierbaul *et al.*, 2020). These foods are produced from cells obtained from live animals and then cultured in the laboratory (Bhat and Fayaz, 2011; Edelman *et al.*, 2005; Moritz *et al.*, 2015). This method of meat production offers multiple advantages, such as higher saturated fat intake, reduced food-borne diseases, lower environmental impact, and greater social responsibility (Edelman *et al.*, 2005). It is an upcoming source of protein and a viable option for people who prefer vegetarian and vegan diets (Milman, 2023). Thus, cultured meat benefits humans, animals, and the environment.

Regarding the environment, this production method reduces the need for water, land, and energy compared to traditional meat production methods (Reis *et al.*, 2020; Tuomisto and Teixeira De Mattos, 2011). On the level of social responsibility, this production contributes to overcoming the problems of world hunger, as highlighted by Sustainable Development Goal 2 (SDG), resulting from the continued growth of the population, which will reach 9.7 billion people in 2050 and, consequently, will require an increase in food production of at least 70 percent compared to today (Pilařová *et al.*, 2022). Conversely, critics assert that it remains unsafe and uneconomical and may harm human health and the environment (Tuomisto and Teixeira De Mattos, 2011).

Widespread use of the Internet and digital platforms has intensified the debate on cultured meat. Digital advancements have significantly transformed how consumers interact and communicate with organisations and one another (Austin *et al.*, 2020; Van der Meer and Jin, 2022). Stakeholders increasingly express their opinions and requests or launch petitions through digital platforms, exposing other stakeholders to specific challenges involving distinct organisations (Rim *et al.*, 2020).

Additionally, there has been a surge in digital social activism, which carries the risk of being swayed by media sensationalism and fake news (Austin *et al.*, 2020; Van der Meer and Jin, 2022). These factors can foster public distrust of the entire industry, thereby tarnishing companies' reputations. In this context, the term 'paracrisis' is used to describe

challenges or threats which, if not properly managed, monitored, and identified, can escalate into full-blown crises (Coombs and Holladay, 2012a), negatively impacting an organisation's corporate image and brand reputation (Pfeffer *et al.*, 2014; Smith and Smith, 2022). Essentially, a paracrisis represents a situation in which unfavourable public opinion or criticism puts an organisation's reputation at stake because of controversial issues or perceived misconduct. Despite ongoing debate (Goodwin and Shoulders, 2013; Hopkins and Dacey, 2008; Stephens *et al.*, 2018), the cultured meat industry remains largely unfamiliar, suggesting that not all aspects are widely understood (Tomiyama *et al.*, 2020; Zhang *et al.*, 2020). Therefore, crafting effective communication strategies is crucial (Meyers and Abrams, 2010) for raising awareness and clarifying misconceptions.

It is well known that consumers rely on media sources in the food industry for information and guidance concerning food-related issues and risks (Bell and Marshall, 2003; Henderson *et al.*, 2017). Managers in this industry must be cognizant of the considerable media attention paid to cultured meat (Meyers and Abrams, 2010). The industry's future and popularity hinge on consumer opinions of its products, including on digital platforms (Goodwin and Shoulders, 2013). Manufacturers' increased online visibility has, in turn, prompted more significant criticism and scepticism from stakeholders due to ethical, sustainability, and technological concerns (Quinton, 2013). Despite the rise in paracrisis situations, most organisations must prepare to tackle such predicaments and unfolding scenarios on digital platforms (Chen, 2022). Few studies have focused on the crisis-prevention phase, which involves monitoring the digital sphere and identifying potential warning signs that may foreshadow impending crises (Chen, 2022; Chen and Holladay, 2023). Constant monitoring and preparation activities may not prevent the onset of a paracrisis. Therefore, implementing a communication strategy capable of responding adequately is needed. Finally, the case under study seems of great interest because the paracrisis concerns not a single company but an entire industry. Based on these considerations, the following research question emerged:

RQ: How can communication strategies effectively mitigate a paracrisis and minimise the negative impacts of its escalation into a crisis?

This study outlines the communication strategies companies use to deal with online debates by conducting content analysis using NVivo 14 software. In addition to assessing the effectiveness of these strategies, considering certain KPIs, such as the number of reactions achieved, the study also aims to explore the comments made by the public on corporate communication to understand their position and the main concerns raised.

The remainder of this paper is organised as follows. The second section consists of a literature review of the concept of paracrisis and its manifestation within the digital landscape as well as potential communication strategies in facing paracrisis. The third section outlines the methodology, which is a multiple case study approach, and presents the four selected cases, offering a review of the primary evidence of communication strategies implemented on social media. The fourth section presents the main findings, and the fifth section discusses the results. The manuscript concludes with the

theoretical and managerial implications and study limitations, paving the way for future research in this area.

2. Literature review

2.1 Paracrisis and digital arena

Digital platforms are where 'firestorms" can be generated, that is, an escalation of user-generated content in a short period that can threaten a brand's reputation (Hansen *et al.*, 2018). This phenomenon can present exaggerated risks with 'little actual economic significance... in the long run' (Hansen *et al.*, 2018, pp. 558). This makes the distinction between critical situations and actual crises complex, so instead of the term 'firestorm', the concept of 'paracrisis', developed by Coombs and Holladay (2012a), has evolved. According to Coombs and Holladay, a paracrisis is 'a publicly visible crisis threat that accuses an organisation of irresponsible or unethical behaviour' (Coombs and Holladay, 2012a, pp.409). The term refers to a situation that is very similar to a crisis and may pose a threat. Such situations can be identified by considering the warning signals generated by various communication tools (Smith and Smith, 2022). Paracrises threaten reputation and can take the form of high-profile public denunciations, boycotts, or firestorms (Hansen *et al.*, 2018; Lim, 2017). A particular type of paracrisis, which is very complex to manage, is challenge paracrisis, namely, the emergence of multiple online voices accusing the organisation of irresponsible behaviour (Castelló *et al.*, 2013; Lerbinger, 1997). Social media can exacerbate this by elevating public communication interactions and negative emotional reactions towards the organisation (Roh, 2017). Thus, a paracrisis can result from criticism expressed by users of messages conveyed by organisations on different communication channels. This activity is hazardous as it can generate negative electronic word-of-mouth (nWOM), which is highly detrimental to the organisation (Honisch and Más Manchón, 2020). With the development and spread of digital platforms, organisations must carefully monitor the narratives created around their brands to prevent potential crises (Coombs and Holladay, 2012a; Honisch and Más Manchón, 2020). As a potential crisis threat, practices can become prodromal crises and the prevention phase of crisis management (Coombs and Holladay, 2012a; Fink, 1986).

The crisis prevention phase emphasises the crucial role of scanning the external environment, which is beneficial for identifying warning signs and emerging threats (Heath and Nelson, 1986; Heath and Palenchar, 2009). Unlike a crisis, in which a prompt organisational response is recommended, immediate and explicit statements are not desirable in a paracrisis. A paracrisis might be noticed if it is recognised only by a small community of stakeholders and thus does not go viral. A paracrisis could stop quickly as users are subject to constant distractions and have such information overload that their attention spans shrink considerably (Chen, 2022). Therefore, once a threat is identified, it is necessary to understand whether and how to deal with it (Coombs and Holladay, 2012a). A

premature declaration by the organisation could generate unwanted public attention on a specific event (Kim *et al.*, 2016). Therefore, managers should monitor the evolution of a paracrisis to determine when direct responses are needed, in which case proactive communication strategies should be developed and implemented (Coombs and Holladay, 2012a; Jaques, 2010). The time evolution may involve multiple communication channels. Even when traditional media coverage is exhausted, discussions may shift and persist longer on social media (Moretti and Tuan, 2015).

A paracrisis becomes a crisis when 'the concern becomes evident and attractive to a range of stakeholders' (Coombs and Holladay, 2012a, pp. 408). In this situation, a paracrisis poses a significant threat to corporate reputation. More specifically, negative statements and comments developed by the public against an organisation can undermine the brand's reputation. Reputation is derived from the information the public learns about an organisation through direct communication produced by the organisation itself and indirect communication provided by other sources of information (Deephouse, 2000; Fombrun and van Riel, 2004; Wartick, 1992; Watson, 2007). Therefore, companies should not underestimate rumours spread through social media, as they may result in negative product judgment. This, in turn, can reduce purchase intention and, thus, sales, turnover, and overall reputation (Chun *et al.*, 2005; Siomkos and Kurzbard, 1994). Therefore, organisations should not ignore the role of social media in reinforcing public narratives and amplifying the potential negative effects (Lee *et al.*, 2013; Lyon and Montgomery, 2013; Phang *et al.*, 2013). Several authors support the relationship between corporate performance and reputation (Brown and Perry, 1994; Carmeli and Tishler, 2005; Pires and Trez, 2018).

The debate around cultured meat takes on the characteristics of a paracrisis when one considers the growing attention on the topic, the potential risks for producers, and numerous negative narratives. Debate is developing within what has been termed the rhetorical arena (Frandsen and Johansen, 2017), namely, a multi-stakeholder dialogue space in which communication processes concern multiple actors and not only the organisation to which the 'crisis' is attributable. According to the authors, the subjects of the arena, in addition to the organisations involved (protagonists), are political actors and public authorities (antagonists), activists and stakeholder groups (claimants), experts and the media (commentators) (cf. Splendiani, 2022). The rhetorical arena must be regarded as the centre of the analysis, within which various actors dialogue by adopting a multi-vocal approach (Seeger and Sellnow, 2016).

Once a threat is identified, the organisation must engage with stakeholders to buffer the situation and minimise potential negative effects (Lee and Lee, 2021). In the social media landscape, it is essential to assess the importance and salience of stakeholders in terms of their power, legitimacy, and urgency. Stakeholders have power when they can harm the organisation if it does not comply with their wishes. Legitimacy represents whether others consider the action requested by the stakeholder group to be desirable or appropriate. Urgency measures the stakeholders' willingness to act (Mitchell *et al.*, 1997). In evaluating a paracrisis, legitimacy is crucial

because if the criticised problem behaviour is illegitimate, public opinion will not be attracted to it and will not support the paracrisis. In this case, the company has no fear. On the other hand, crisis managers will have to worry when there is a strong link between problematic organisational behaviour and stakeholders' negative evaluation of such behaviour (Coombs, 1992; Coombs and Holladay, 2007, 2012b). To determine whether other stakeholders will support this claim, it is necessary to understand whether the problem concerns values that are important to the public (Edelman, 1964; Graber, 1976).

The trajectory of a paracrisis is derived from the quantity and value of messages transmitted through traditional and social channels (Coombs and Holladay, 2012a). The quantity is represented by the number of messages sent, which, as it grows, demonstrates solid public attention. The value of messages lies in the number of viewers that the communication can reach, which is intensified by using different media (Moons *et al.*, 2009).

2.2 Strategies for overcoming a paracrisis

According to Coombs and Holladay (2015), an organisation can respond to paracrisis using six response strategies (Tab. 1): refusal, refutation, repression, recognition, revision, and reform (Coombs and Holladay, 2015). Refusal occurs when an organisation intends to ignore a challenge and refuses to respond. Refutation occurs when an organisation considers a challenge to be invalid. Repression represents organisational efforts to limit the spread of a challenge, which is particularly important in the digital arena, in which information, rumours, and misinformation can circulate very quickly. Recognition occurs when the organisation recognises the problem but does not change its behaviour, whereas revision is the strategy by which the organisation makes changes in line with the demands that have emerged from opposing parties. The reform strategy, on the other hand, represents the realisation of the change requested by the challenger (Coombs and Holladay, 2015).

Proactive communication is essential to prevent potential threats and mitigate their negative effects (Coombs, 2018). Ideally, such effects are contained in organisational responses to public questions and criticisms expressed on digital platforms (Claeys and Opgenhaffen, 2016). Several proactive communication strategies such as strategic silence, supportive PR, and inoculation can be adopted. Strategic silence is defined as the deliberate absence of organisational communication (Le *et al.*, 2019); the strategy of supportive PR involves the communication of positive arguments aimed at reinforcing favourable attitudes towards the company, generating a buffer to be used in negative situations (Wan and Pfau, 2004); inoculation is the use of warning messages that are less likely to persuade the recipient and make them more resistant to persuasive attacks (Boman and Schneider, 2021). The fourth proactive strategy used in the literature is scene stealing (Arpan and Pompper, 2003). As this mechanism induces the disclosure of a weakness or failure before a third party announces it, it is not always considered appropriate (Boman and Schneider, 2021).

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Tab. 1: Paracrisis response strategies

Main Strategy	Strategy	Description	References
Response strategy	Refusal	Crisis denial	Coombs and Holladay, 2015
	Refutation	"The problem does not exist". The organisation responds by denying and providing evidence.	Coombs and Holladay, 2015
	Repression	The organisation aims to stop the paracrisis from the beginning through a lawsuit.	Coombs and Holladay, 2015
	Recognition	The organisation recognises the problem	Coombs and Holladay, 2015
	Revision	Implementation of changes	Coombs and Holladay, 2015
	Reform	Promoting change	Coombs and Holladay, 2015
Proactive communication strategies	Strategic silence	No responses	Le *et al.*, 2019
	Supportive PR	The organisation communicates positive arguments aimed at reinforcing favourable attitudes	Wan and Pfau, 2004
	Inoculation or pre-bunking	The use of warning messages against fake news	Boman and Schneider, 2021; McGuire, 1970
	Scene-stealing	The organisation declares a weakness before it emerges from third parties	Arpan and Pompper, 2003

Source: Our elaboration

In addition to the choice of strategy, the communication channels and parties involved must match. Communication tactics on social media, in the case of a paracrisis, should follow three best practices: (1) be where the action is, that is, respond to the channels in which the paracrisis has occurred; (2) be present before the paracrisis occurs, that is, the need to build credibility and a certain number of followers before negative rumours develop (Safko and Brake, 2009); and (3) be redundant, that is, use several communication channels, traditional and social, even overlapping each other. If redundancy is not excessive, it positively affects exposure and persuasion (Moons *et al.*, 2009).

Drawing on studies on crisis communication response strategies (Coombs 2007), it is crucial that organisations present 'their side of the story' or can represent the main voice on the topic to provide the 'official version'. Therefore, organisations must be able to systematically disseminate accurate, truthful, and timely information, avoiding inaccurate and unreliable news that will soon fill the information gap (Kara, 2019).

Hence, to overcome moments of crisis quickly, companies must invest considerable resources in advertising and communication campaigns to strengthen their brand image and credibility. These initiatives entail considerable effort in terms of costs and developing a coherent organisational strategy because managerial change may require costly modification of business practices. However, the cost of reputational damage is difficult to calculate and can be much higher. Therefore, if a paracrisis poses a real threat, the organisation must be willing to spend money to change the situation. Managers are justified in resisting change when costs are high and/or actions are inconsistent with long-term corporate objectives (Coombs and Holladay, 2012a).

3. Methodology

The methodology adopted was a multiple-case study. Multiple case studies are an appropriate research method for building theory as they combine knowledge from previous publications and collect data from selected companies. Therefore, it is a particularly suitable methodology for investigating complex social phenomena (Simons, 2009), such as the cultured meat industry, which incorporates social, ethical, and environmental issues. The ability to provide practical evidence from more than one business case enables a comparison of communication strategies and adds value to the literature (Yin, 2017). The cases explored allow for a holistic view of contemporary phenomena, providing a deeper understanding of the communication strategies employed in this industry.

3.1 Research context

The research context concerns the debate around the emerging cultured meat industry, taken into consideration because it presents the traits of a paracrisis, that is, a creeping crisis with potentially harmful effects on the image of not just a single company but of all companies operating in the industry. This debate has seen its most remarkable escalation across digital platforms, particularly on Facebook, where proponents and opponents of cultured meat have been very quick to post content using the hashtags #culturedmeat, #labgrownmeat, and #cellbasedmeat.

The debate has been fuelled by younger generations, highly educated people, and those from developed countries showing increasing interest in this food (Tomiyama *et al.*, 2020; Van Loo *et al.*, 2020). However, other consumers remain wary of consuming cultured meat because it is perceived as highly technological (Chriki *et al.*, 2021) and inauthentic (Bryant and Barnett, 2018). Contrarian attitudes towards cultured meat production result in distrust of cultured meat producers and widespread critical discussions on digital platforms (Bryant and Barnett, 2018). These contrarian and negative attitudes also stem from government positions in some countries, such as Italy, which allow the import of these products but not their production (Cappellini, 2023). The only countries where retail trade has been allowed thus far are Singapore and the United States. In these contexts, generating contrary stakeholder movements is easy and has led to the creation of communication that increases public scepticism and concern. For this reason, startups and innovative cultured meat companies, which have emerged worldwide, are working to overcome the many challenges the industry presents in terms of regulation, public acceptance, and reducing production costs to ensure greater accessibility of the product for all segments of the population (Maci, 2023).

3.2 Case Study Selection

This study provides a purposive sample to select the most representative producers for the study objectives. Purposive sampling allows for a deeper understanding of a phenomenon than probability sampling, especially considering the limited number of cases (Marshall and Rossman, 1995).

According to the Good Food Institute (GFI, 2023), 174 organisations were counted among the many emerging actors in 2023. The study only considers companies that market and produce exclusively cultivated meat. Four cases were selected among the leading actors identified because they actively communicate on Facebook, which is the main place for debate on the topic.

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- *Company A:* Founded in 2015 and based in Berkeley, California, Company A is a pioneer in cultured meat production. In 2022, it became the first company to receive safety certification from the FDA for cultured chicken. The company has an innovative production centre in California, and the cultured chicken was first sold to the public in July 2023.
- *Company B:* Company B is part of Eat Just, Inc., and was founded in 2016. It was the first company to sell cultured meat globally, with licenses in Singapore and the US. Their cultured chicken is available in high-end restaurants and through deliveries. The company aims to create a safer and more sustainable food system.
- *Company C:* Company C was founded in Jerusalem in 2018 and is a leading producer of cultured meat. Specialising in chicken meat, it opened the world's largest cultured meat production facility, located in Wilson, North Carolina. The organisation aims to make meat affordable, sustainable, and antibiotic-free through advanced technology that does not require animal slaughter.
- *Company D:* Founded in 2016 in the Netherlands, Company D is a pioneer of cultured beef production. This company created the world's first cultured beef burger and has continued to develop technologies to reduce production costs. The company aims to commercialise cultured meat on a large scale within a few years, with a focus on sustainability and animal welfare.

Table 2 provides an overview of the four selected companies in terms of headquarters, year of foundation, and number of employees.

Tab. 2: Company description

Companies	Headquarter	Foundation year	Employees
Company A	Berkeley, California	2015	198
Company B	Alameda, California	2016	130
Company C	Jerusalem, Israel	2018	100
Company D	Maastricht, The Netherlands	2016	80

Source: Our elaboration of information extracted from company websites

3.3 Data collection and data analysis

The first step was to collect all posts published on Facebook by the four cases studied in one year (e.g. June 2023-June 2024) to analyse the communication strategies conveyed by the companies on social media.

We conducted manual collection on the Facebook pages of the four companies, collecting 129 posts/communications focusing on aspects related to cultured meat and its promotion in the market. In addition to

the text of the communication, additional information was collected such as the number of public reactions and the number and text of comments written by the public in response to company posts.

In the second phase, the company posts were analysed through content analysis using the NVivo 14 software. Corporate communication scholars primarily apply this method because it is a systematic and reproducible methodology for analysing textual data (Krippendorff, 2018). This analysis involved coding the extracted textual units according to the theoretical framework presented in Table 1. All authors coded all textual units, and the researchers only engaged with each other in cases of disagreement. Each textual unit was coded according to strategic responses and proactive communication, opting for multiple codes when communication was suitable for multiple objectives, especially considering that corporate communication has often been very long and wordy. The coding of textual units also explored the keywords most frequently used in corporate communications.

In the third and final step, we assessed the effectiveness of corporate communication by considering KPIs related to audience engagement, such as the number of reactions and comments elicited (Wang and Zhuang, 2017). In addition, textual coding of public comments was conducted to catalogue the main issues and concerns that emerged from the online debate on cultured meat in response to corporate communication strategies.

Table 3 summarises the methodological approach adopted in these three steps.

Tab. 3: Process of data collection and data analysis

Step 1 - Collection of social media posts
A. Manual extraction of all posts published by companies in the last 12 months (June 2023-June 2024) B. In-depth observation of all posts by researchers in order to create a corpus/document/database
Step 2 - Text mining analysis
C. Analysis of the most frequent words using text mining software Nvivo C. In-depth observation of posts by researchers in order to encode them based on their purpose
Step 3 - Assessment of social media publishing activity
E. Identification of Social Media KPIs E. Evaluation of social media activity based on the categories of messages E. Analysis of the comments on the posts

Source: Our elaboration

4. Results

4.1 Overview of corporate communication on Facebook

A total of 129 posts were collected and distributed as follows: 57 (44.18%) from Company B, 46 (35.65%) from Company A, 17 (13.17%) from Company C, and nine (6.99%) from Company D.

The coding carried out on the company posts showed that the most frequent words within the company communication were the following: 1) 'meat' with 3.36%, 2) 'cultivated' with 2.88%, 3) 'chicken' with 2.12%,

4) 'food' with 1.37%, 5) 'first' with 1.33%, 6) 'future' with 1.28%, 7) 'world' with 0.88%, 8) 'good' with 0.84%, 9) 'delicious' with 0.71%, and 10) 'new' with 0.62%, as evidenced by the word cloud obtained on NVivo (Figure 1). Words that highlight companies' clear focus on conveying their commitment to the meat industry's future revolution through innovation and sustainability.

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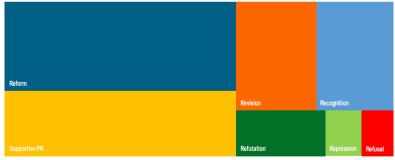
Fig. 1: Word Cloud

Source: our elaboration

The coding of corporate communication showed that the most frequently used response strategies were 'Reform', 'Supportive PR', 'Revision', 'Recognition', and 'Refutation', as shown by the hierarchical graph obtained on NVivo (Figure 2).

Fig. 2: Hierarchical Chart

Source: Our elaboration

The company's most prominent strategy is the 'Reform' strategy, which aims to emphasise the significant changes companies are committed to pursuing to achieve the sustainable and ethical development of the cultured meat industry. This category includes corporate communications aimed at highlighting how organisations intend to address future challenges in the industry.

Among proactive communication strategies, the most widely used is 'Supportive PR', which emphasises the use of these products by celebrities and external parties and their promotion by other supporters. Within this category, companies communicated their commitment to creating synergies with other organisations and planning events to increase the notoriety of the product and expand the audience. Concerning this objective, organisations also offered opportunities to taste their products free of charge.

The third most frequently used strategy is the 'Revision' strategy, whereby companies make revisions in their communication to convey transparent information about their products and processes to educate the public, which is still poorly informed regarding the product. This communication aims to emphasise quality, safety, and compliance with high standards. The messages emphasise the work and dedication of experts within the company team, whose passion and precision are dedicated to ensuring the highest quality, larger capacity, and better taste.

Finally, the 'Recognition' strategy boasts, for example, the first marketing of the product in certain establishments or the use of products in renowned outlets such as Michelin Guide restaurants. In this category, messages regarding certifications acquired by companies to overcome specific problems were collected. The 'Refutation' strategy is focused on rejecting untrue information and news that can cast a negative light on the company's work, leading us to reflect on how certain behaviours, even political ones, could limit the technological and innovative development of the industry. The latter strategy has mainly been used in the face of politically induced regulations and forces related to agricultural lobbying.

Table 4 shows that the 'Reform' strategy, which was the most used by all of the companies analysed, and the 'Revision' strategy reached their highest percentage for Company C, respectively equal to 49.04% and 22.68%. Company D, on the other hand, found the highest percentage for the 'Supportive PR' strategy equal to 36.24%. The other three proactive communication strategies, that is, strategic silence, scene-stealing, and inoculation, were not used at all by the four companies analysed.

Tab. 4: Distribution of communication strategies among organisations

	Company A	Company B	Company C	Company D
Refusal	0.00%	1.49%	0.00%	0.00%
Refutation	5.95%	9.91%	10.22%	0.00%
Repression	4.37%	0.00%	0.00%	0.00%
Recognition	4.58%	23.13%	16.77%	16.01%
Revision	18.05%	10.04%	22.68%	7.87%
Reform	47.78%	23.95%	49.04%	39.89%
Supportive PR	19.27%	31.48%	1.28%	36.24%
Strategic Silence	0.00%	0.00%	0.00%	0.00%
Scene-stealing	0.00%	0.00%	0.00%	0.00%
Inoculation	0.00%	0.00%	0.00%	0.00%
Total	**100.00%**	**100.00%**	**100.00%**	**100.00%**

Source: our elaboration

Table 5 shows that the communication strategies most appreciated by the public, considering the highest average of reactions achieved, were the 'Revision' strategies, with a value of 34.82, the 'Supportive PR' strategies, with a value of 31.56%, and the 'Reform' strategies, with a value of 30.22, all values that are higher than the overall average of 29.22. This reveals how the public appreciated communications that focused primarily on educating the public, transparency of the products and processes carried out, and the standards met.

Tab. 5: Average number of reactions per strategy

Communication Strategy	Average Number of Reactions
Recognition	26.15
Reform	30.22
Refusal	7.00
Refutation	14.55
Repression	22.00
Revision	34.82
Supportive PR	31.56
Total	29.22

Source: our elaboration

4.2 Overview of the main concerns raised by the audience

The comments on the collected posts totalled 383, divided as follows: 239 (62.40%) in response to Company A's posts, 95 (24.80%) in response to Company B's posts, 25 (6.52%) in response to Company D's posts, and 24 (6.26%) in response to Company C's posts.

Table 6 shows how public comments were particularly divided between optimists and sceptics about cultured meat, with leading shares of 29.84% and 21.54%. The former includes optimistic messages, that is, eagerness to try the products, waiting to find the product in a shop, and trust in a better future for the industry. In contrast, sceptical messages include all messages that are particularly pessimistic about machine-created products, reluctance, and distrust of cultured meat.

Leaving aside this opposition of opinions, public comments highlighted the request for more product information for 12.94%, for example, availability and concerns regarding the safety of production processes such as where and how the products are produced accounting for 6.17 % as well as comments focused on regulatory aspects, such as production and marketing bans implemented in certain countries, accounting for 5.97%. A significant percentage were categorised as 'Other', namely, residual items. More limited were comments related to 'respect for animals', in which the public claims to prefer to consume this product to respect animals and avoid barbarism, at 3.81%; aspects related to 'taste', as some claim that the taste of the product is still not satisfactory, at 3.59%; aspects related to food diets, such as whether the products having been extracted from animal cells corresponds to the needs of vegan and vegetarian diets, at 2.62%; aspects related to 'price' regarding the excessively high price, which renders the product largely unaffordable, at 1.19%; and aspects related to other

unresolved 'environmental concerns', such as packaging and emissions from production, at 1.00%.

Tab. 6: Comment topics and distribution among companies

Comments	Company A	Company B	Company C	Company D	**Total**
Diet (vegetarian, vegan, etc.)	1.91%	0.00%	20.00%	0.00%	**2.62%**
Environmental concerns	0.96%	0.00%	5.71%	0.00%	**1.00%**
Information	13.69%	12.61%	8.57%	11.90%	**12.94%**
Optimism	35.03%	31.53%	2.86%	9.52%	**29.84%**
Other	5.73%	16.22%	0.00%	50.00%	**11.33%**
Price	1.91%	0.00%	0.00%	0.00%	**1.19%**
Regulation	7.01%	6.31%	0.00%	2.38%	**5.97%**
Respect for animals	1.91%	6.31%	14.29%	2.38%	**3.81%**
Safety concerns	6.69%	5.41%	5.71%	4.76%	**6.17%**
Skepticism	21.66%	17.12%	37.14%	19.05%	**21.54%**
Taste	3.50%	4.50%	5.71%	0.00%	**3.59%**
Total	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**

Source: our elaboration

Table 7 reflects how 'Refusal' messages triggered particularly sceptical and regulation-based public comments. Concerning 'Refutation' messages, the comments focus on the issues and doubts concerning the safety of ingredients as well as processes and regulations. 'Repression' strategies generated curiosity and enquiries from the public and debate around regulation aspects. Regarding the 'Recognition' strategies, comments were mostly sceptical, whereas with the 'Revision', 'Reform', and 'Supportive PR' strategies, comments were very optimistic. The latter strategy has been the one most likely to generate optimism among the public and debate over the possibility of respecting animals by consuming these products.

Tab. 7: Comment topics and distribution among main strategies

Comments	Refusal	Refutation	Repression	Recognition	Revision	Reform	Supportive PR	Total
Diet (vegetarian, vegan, etc.)	0.00%	4.35%	0.00%	3.0%	3.33%	2.49%	1.23%	**2.59%**
Environmental concerns	0.00%	0.00%	0.00%	1.5%	0.83%	1.49%	0.00%	**1.00%**
Information	0.00%	4.35%	14.29%	10.6%	15.83%	13.43%	12.35%	**12.55%**
Optimism	0.00%	30.43%	14.29%	22.7%	31.67%	26.37%	44.44%	**29.88%**
Other	0.00%	8.70%	0.00%	18.2%	11.67%	12.44%	4.94%	**11.35%**
Price	0.00%	0.00%	0.00%	0.0%	1.67%	1.99%	0.00%	**1.20%**
Regulation	50.00%	17.39%	71.43%	1.5%	2.50%	4.98%	6.17%	**5.98%**
Respect for animals	0.00%	0.00%	0.00%	4.5%	4.17%	3.48%	4.94%	**3.78%**
Safety concerns	0.00%	17.39%	0.00%	4.5%	4.17%	7.46%	4.94%	**5.98%**
Skepticism	50.00%	17.39%	0.00%	28.8%	22.50%	20.40%	18.52%	**21.51%**
Taste	0.00%	0.00%	0.00%	4.5%	1.67%	5.47%	2.47%	**3.39%**
Total	**100.00%**	**100.00%**	**100.00%**	**100.0%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**

Source: our elaboration

Overall, the comments were primarily optimistic, demonstrating the increased responsibility of the public and a strong desire to consume these

products to have a more sustainable and ethical diet. However, there is still scepticism among the public regarding the lack of knowledge regarding the product, its regulatory aspects, and the excessively high price that makes consumption difficult. Because the public still knows little about the product, many of the comments are questions posed to the company by the public to gather more information for accurate assessment. Therefore, organisations must respond to public doubts with extreme clarity and transparency to convey confidence in their purchases, for example, by highlighting the use of clear labels and compliance with high technological and quality standards.

5. Discussion

Therefore, the analysed organisations responded to the escalation of online communication and debate, as demonstrated by the increasing number of hashtags on the topic, by actively communicating on the social media platform Facebook. Thus, all the analysed organisations recognised the problem and adopted communication strategies aimed at bridging the information gap, educating the public, creating good synergy, and attempting to convey accurate, rich, and detailed messages to foster transparency and public trust (Safko and Brake, 2009).

The three communication strategies most implemented by organisations were 'Reform' (Coombs and Holladay, 2015), 'Supportive PR' (Wan and Pfau, 2004), and 'Review' (Coombs and Holladay, 2015). These strategies proved to be the most effective, as they generated the highest number of audience reactions, demonstrating some involvement, and the highest rates of optimistic comments towards adopting the product. Optimistic comments were exceptionally high in frequency due to the company's proactive 'Supportive PR' strategy, which was aimed at enhancing the product through third parties such as celebrities, influencers, and other external parties, creating synergies and partnerships with organisations and universities, as well as enhancing the creation of events aimed at promoting and publicising the product to a wider audience. Therefore, these three strategies succeeded in generating positive WOM among the public by minimising the potential negative effects of the paracrisis, whereas the 'Refusal' strategy with which the main sceptical comments were associated favoured the spread of negative WOM.

The 'Reform', 'Supportive PR', and 'Revision' strategies thus demonstrate how organisations were ready to take proactive measures to avoid the generation of a full-blown crisis. The generation of positive WOM, that is, optimistic comments, highlights the public's appreciation of the company's commitment. Organisations were attentive in responding to consumer needs, strengthening trust, and improving the company's public perception. Transparency and clear communication also foster public appreciation, reinforce trust, and mitigate potential reputational damage (Coombs, 2007; Dowling, 2006; Homburg *et al.*, 2013).

The company that communicated the most with the public was Company B, but public interaction was much higher for Company A. Thus,

Company B seems to have been penalised by the public for its greater use of 'Refusal', 'Refutation', and 'Recognition' strategies, which proved less positive in generating public engagement and involvement as they are aimed at rejecting the existence of a crisis (Coombs and Holladay, 2015).

On the other hand, the 'Supportive PR' strategy was particularly appreciated by the public as it involved using influencers known and liked by the public, a tool that enhanced credibility and nurtured corporate reputation, limiting negative electronic WOM in favour of positive. At the same time, the other three proposed proactive communication strategies of strategic silence, inoculation, and scene stealing were not used (Le *et al.*, 2019; Boman and Schneider, 2021; McGuire, 1970; Arpan and Pompper, 2003).

6. Theoretical and managerial implications

This study enriches the literature on strategic communication for containing and minimising the effects of a potential crisis. As Schermer (2021) demonstrated, the constructs proposed in the literature to overcome reputational crises often need to be revised because of the unique nature of each crisis and the need to consider the roles of many stakeholders. This multidisciplinary field involves multiple actors (Hallahan *et al.*, 2007). In the participatory culture in which we live, these actors, such as consumers and citizens, play an increasingly active role in communicating with organisations, gathering information from various sources, and spreading their voices. These aspects can influence the reputation of a brand and the behaviour of other consumers (Jenkins, 2006). This makes relations between organisations and stakeholders particularly crucial but, at the same time, much more complex than in the past and more fragile to maintain over time, requiring considerable effort on the part of organisations. Therefore, strategic communication has become a critical organisational asset for survival. The objective of strategic communication must be to defend an organisation's legitimacy within society. Strategic communication plays a role in directing social change and public behaviour (Falkheimer, 2014).

This study has several pragmatic implications for meat industry managers and professionals. First, it emphasises the imperative nature of constantly monitoring digital platforms to identify potential threats and challenges. Equally critical is the recognition and involvement of influential stakeholders-the increasingly active and responsible public-who can exert substantial influence on the trajectory of a paracrisis. In this context, an organisation's strategic communication can prevent and mitigate the negative effects of a paracrisis from degenerating into a crisis. A noteworthy implication of this research concerns the role of social media platforms, such as Facebook, in amplifying the voices and debates of supporters and detractors. The ability to respond promptly and effectively on this platform is crucial for companies that must establish their social media presence in advance of any potential paracrisis. Among the strategies implemented, 'Refusal' strategies appear to be ineffective at minimising harm as they arouse scepticism in the public and lower involvement. In contrast, the use

of 'Revision', 'Reform', and 'Supportive PR' communication strategies fuel optimism and thus positive WOM in the public as well as ensuring high involvement. Thus, these strategies can help create a good corporate image, foster product adoption, build public trust, and communicate a company's commitment to pursuing future challenges in the cultured meat industry in terms of sustainability and ethical compliance.

Second, communication strategies aimed at emphasising the positive contributions that companies have made to society aim to reduce negative rumours, playing on corporate credibility, brand image, and corporate reputation. Communication aimed at spreading companies' commitment to social responsibility positively influences brand credibility, equity, and reputation (Keller and Lehmann, 2006). A growing body of academic research attests to the wide range of benefits a company can gain by demonstrating its commitment to CSR (Du *et al.*, 2007; Sen, 2006). Communication that raises public awareness of environmental and social issues makes it easier for a company to maintain its corporate reputation over time (Breitbarth and Harris, 2008), making it a precious resource in the event of crises and scandals.

Detailed and transparent communication aimed at educating and informing the public about a particularly innovative and unknown industry such as cultured meat, contributes to increasing the public's perceived quality of the product, obtaining greater trust, and, thus, increasing purchase intentions (Rodríguez Escobar *et al.*, 2021). Communication can improve consumers' perception of a company's reliability and product quality, making them more likely to purchase and consume the product (Keller and Lehmann, 2006). In addition to creating greater public awareness, transparent communication strategies help counteract the scepticism and reluctance of other stakeholders (Du *et al.*, 2010).

Because the paracrisis analysed in this study affects the entire industry, various operators and associations should collaborate and coordinate their work to promote the future development of cultured meat, which can advance the arguments of the entire sector to overcome extreme regulatory constraints.

7. Conclusion, limitations, and future research

This study explored the intricate dynamics of strategic communication in the cultured meat industry, focusing on preventing paracrisis and mitigating its potential negative effects.

Proactive strategic communication is a valuable resource for organisations, as it enables them to shape narratives, counter misconceptions, and pre-emptively address debates and disputes. Research findings that highlight the importance of transparent communication aimed at educating and raising awareness offer useful guidance to companies wishing to strengthen their credibility and resilience during future crises. Communication strategies must be adapted to the power, legitimacy, and urgency of stakeholders as these factors significantly influence public perception and support. The power of the public, which

is increasingly sensitive to and responsible for these issues, has increased over time and tends to largely influence and condition corporate actions.

Therefore, this research identified the communication strategies of leading companies in this growing sector while assessing the implications of public interaction and debate through an exploratory methodology involving multiple case studies and content analysis using NVivo 14 software. This led to the delineation of the most effective communication strategies for generating optimistic commentary and higher engagement with the public, which are central to navigating online debates in an industry characterised by innovation, a high degree of ethical consideration, health implications, and strong environmental concerns.

Communication strategies should not only inform and educate the public but also aim to create an emotional narrative to disseminate and raise awareness of the diverse opportunities that this industry holds.

Finally, the research highlights the relevance and necessity of effective strategic communication as the cultured meat industry evolves, communication that must ensure that various obstacles such as regulatory limitations and consumer scepticism are overcome. Therefore, the effective use of strategic communication can be a powerful tool to contain possible crises, cultivate favourable stakeholder relations, and ensure trust with the public in an ever-changing landscape. Therefore, in an era in which more transparency and control are demanded, strategic communication has become an indispensable resource for organisations seeking to thrive in this digital transformation environment.

However, it is essential to recognise the limitations of this study. The scope of the study was limited by its small sample size, which included only four companies, thus limiting the generalisability of the results. Therefore, future research should expand the sample size to include more companies. In addition, future studies could attempt to overcome the subjectivity of content analysis, which is already limited and minimised through coding by all authors involved in the study.

Furthermore, future studies could examine different social platforms to highlight potential differences in online engagement and debates, especially among younger generations, such as Generation Z, who represent audiences particularly sensitive to environmental and social issues.

The use of quantitative research methodologies would allow for the measurement of the impact of proactive strategic communication on key business metrics such as reputation and financial performance, enabling a deeper understanding of the benefits associated with strategic and proactive communication.

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Academic or professional position and contacts

Ginevra Testa
Research Fellow of Management
University of Genoa - Italy
e-mail: ginevra.testa@edu.unige.it

Luca Giraldi
Tenure-Track Researcher of Management
University of Turin - Italy
e-mail: luca.giraldi@unito.it

Simone Splendiani
Assistant Professor of Management
University of Perugia - Italy
e-mail: simone.splendiani@unipg.it