Face the Truth : A Clear Vision through an Ethical Research of Facial Expressions

A delphi method to propose guidelines according to IP/IT experts

Charlotte De Sainte Maresville *
IAE Vannes, LEGO
charlotte.de-sainte-maresville@univ-ubs.fr

Charlotte De Sainte Maresville is a PhD student in marketing and user behavior. Her thesis explores the impact of variations in non-facial, non-verbal information on decision-making processes, particularly in face-to-face and computer-mediated communication contexts. She combines theories of consumer psychology, non-verbal communication, and emotional marketing to analyze the subtle influences of facial expressions and non-verbal cues in commercial interactions. Passionate about optimizing facial analysis methods, she proposes innovative approaches to better understand emotional dynamics in consumption contexts.

Christine Petr
IAE Vannes, LEGO
christine.petr@univ-ubs.fr

Christine Petr is a Professor of Marketing at the IAE Bretagne Sud in France, where she conducts research on consumer behavior, particularly within the realms of digital and tourism innovations. She is affiliated with the Laboratoire d'économie et de gestion de l'ouest (LEGO), a research laboratory she previously led at UBS in Vannes. Her research primarily focuses on the intersection of cultural practices and tourism consumption in the context of digital advancements. Christine Petr also leads the Tourism axis in the Innovation Ecosystem M&L at UBS and co-manages the French Marketing Association's national thematic group on Innovations in Tourism and Culture (ICT). As a European expert, she advises the European Commission on "Tourism and Digital" and "Crises and Resilience in Tourism" since the onset of the Covid pandemic.

Abstract
Analysing facial expressions offers significant potential for digital marketing, enabling a more refined understanding of consumers' emotional reactions. However, its use raises important ethical and legal questions. Particularly concerning the protection of personal data and respect for privacy. This study explores the possibilities and limitations of the ethical use of facial expression in the context of digital marketing.

Keywords
Facial Expressions, Ethics, Digital Marketing

Research Focus
Big Data, Artificial Intelligence, Facial Expressions, Data Privacy, Marketing

Literature Review

With the proliferation of front-facing cameras on phones, PCs, tablets, and self-checkout kiosks, the opportunities to use facial expressions in marketing have never been more expansive. These ubiquitous devices allow for a finer and more accessible analysis of consumer emotions, opening up new perspectives for understanding their reactions and preferences in real-time. Companies like Walmart, Coca-Cola, Procter & Gamble, and Adidas are already leveraging this technology to enhance customer experiences and optimise marketing strategies. However, this innovative technology still faces major challenges, particularly regarding interpretation and ethics.

While Paul Ekman's seminal work in 1992 significantly advanced the study of facial expressions, his methods have not gained widespread adoption. This is partly due to the absence of a standardised approach for interpreting these expressions, which hampers accessibility for non-specialized researchers. Additionally, variability in how different researchers apply facial expression analysis complicates its broader use. Specialised tools for facial expression analysis are available but are still in development and limited in number. Furthermore, the accuracy and reliability of these tools remain subjects of debate, despite advances in neuroscience introducing new analytical methods (Dupré et al., 2020).

Despite the challenges in widespread acceptance of facial expressions analysis, Data Protection Officers (DPOs) within companies and universities are increasingly tasked with overseeing and regulating its use in marketing and research contexts. This responsibility presents significant challenges as the technology becomes more widespread. DPOs face growing demands to ensure compliance with data protection regulations while also facilitating the adoption of these innovative tools.

For research purposes, it would be beneficial to address the complex needs of these professionals by fostering collaboration between university DPOs and their corporate counterparts. This cooperation could help in developing best practices and leveraging the flexibility of new application frameworks in research settings. University researchers should seize this opportunity to address both the managerial challenges faced by DPOs and the broader ethical concerns surrounding facial expression analysis, thereby contributing to more responsible and well-regulated use of this technology.

The focus of this research is to critically assess the constraints, challenges, and ethical issues related to the use of facial expressions in digital marketing so that it’s possible to develop guidelines and best practices for facial expression analysis.

Using a Delphi method with IP/IT experts, the article offers actionable recommendations for marketing researchers, emphasising responsible and transparent use of facial expression analysis technology.

Details of applicable laws and legal frameworks for each stage of the investigation process are provided for French researchers. It's crucial to note that facial coding technology must be used in compliance with data protection regulations such as GDPR, and with full transparency towards consumers.

The applications of facial expression analysis in marketing are diverse, ranging from advertisement optimization and brand tracking to product testing and consumer research. For instance, the BBC has used this technology to analyse viewer reactions to show trailers and TV programs. Research firms like GfK's EMO Scan use consumers' webcams to track facial expressions in real-time during advertisement viewing. These applications demonstrate the potential of facial expression analysis to provide valuable insights into consumer behaviour

and preferences, ultimately leading to more effective marketing strategies and improved product development.

Ethical Issues of Facial Expressions

The use of facial expressions in marketing raises significant ethical questions, especially concerning the methodology of data collection. Ideally, to obtain authentic reactions, it would be preferable to film participants without their knowledge. However, this raises issues regarding privacy and GDPR compliance. Informing participants of the recording risks introducing biases in their reactions, thus compromising the validity of the collected data (Nissenbaum, 2010).

Firstly, the collection of facial data poses a fundamental ethical dilemma. To obtain authentic and unbiased reactions, it would be ideal to film participants without their knowledge. However, this approach violates the fundamental principles of privacy and informed consent. As Nissenbaum (2010) points out, privacy in the digital context goes beyond the mere protection of personal information; it involves maintaining the integrity of the social contexts in which individuals operate.

On the other hand, informing participants that they are being filmed can introduce significant biases in their reactions, thereby compromising the ecological validity of the collected data. This phenomenon, known as the Hawthorne effect or reactivity, can significantly alter individuals' natural behaviour (McCambridge et al., 2014). In the context of facial expression analysis, this can result in the suppression or exaggeration of emotional reactions, thus skewing study results.

Compliance with the General Data Protection Regulation (GDPR) adds another layer of complexity. The GDPR considers biometric data, including facial expressions, as sensitive data requiring enhanced protection. This not only involves obtaining explicit consent but also implementing robust security measures to protect these data (Voigt and von dem Bussche, 2017).

Moreover, the increasing use of artificial intelligence to analyse facial expressions raises additional ethical questions. AI algorithms can perpetuate or amplify existing biases, particularly concerning the recognition of emotions across different cultures or ethnic groups (Howard and Borenstein, 2018). This raises questions about the fairness and validity of interpretations based on these technologies.

Finally, there is the issue of the responsible use of the collected data. Even with obtained consent, researchers and marketers have an ethical responsibility regarding how these data are used, stored, and potentially shared. The possibility of re-identification from supposedly anonymized data is a real risk that must be considered (Ohm, 2010).

Opportunities of Facial Expressions

Despite these challenges, the emergence of social networks and the widespread availability of cameras on smartphones offer new opportunities for facial expression analysis in marketing. The proliferation of user-generated video content (selfies, videos, streams) provides a rich source of data potentially exploitable by marketing researchers. For instance, platforms like TikTok and Instagram already incorporate facial analysis technologies, gradually normalising these practices among the general public (Gillespie, 2018).

Numerous tools have already been developed for facial expression analysis, with evidence of their use in professional contexts. The increasing professional practice of recording facial

reactions, especially via front cameras on social media applications, raises questions about users' informed consent and corporate transparency regarding the use of these data.
These practices of recording user reactions are also used in beta testing and new product development. They are part of a broader logic of continuous improvement of products and services based on direct observation of user reactions (Murphy et al., 2016).

Methodology

To enrich the theoretical discourse on the ethics of digital marketing using a Delphi method.
This consists of collecting the opinions of each expert individually and anonymously. These responses are then shared with the group to facilitate revisions and adjustments, ultimately seeking to reach a consensus on the subjects studied.

Delphi Method

The Delphi method was initially developed in the 1950s by Olaf Helmer and Norman Dalkey. This approach aims to obtain a consensus from experts on complex issues through a series of iterative questionnaires. It is characterised by the anonymity of participants, iteration with controlled feedback, and the statistical aggregation of responses.
The method was designed to structure a group communication process to solve complex problems. It is particularly useful in areas where uncertainty is high, such as technological forecasting, public policy decision-making, and management research.
Over the years, the Delphi method has been adapted and applied in various sectors, including management, economics, technology, and social sciences. Its use has increased in scientific studies, attracting the attention of professionals in medicine, finance, economics, marketing, management, and human resources.

Data collection

A form was developed to gather data on the use of facial expressions and the collection of consent regarding sensitive data. The questions were designed to address various aspects, including the perception of facial expressions as sensitive data, consent requirements, and the ethical implications of their use in marketing. The details of the questions are provided in the appendix.

Panel of Experts

The study was conducted with a diverse panel of 18 experts in the fields of intellectual property (IP) and information technology (IT). The experts, both men (⅔) and women (⅓) aged 24 to 47, included digital law specialists, Data Protection Officers (DPOs), Phd students in digital law, and professionals working in GDPR compliance.
Experts were recruited through LinkedIn, where a call for participation was posted, specifically targeting profiles relevant to the study. They were invited to fill out a Google Forms survey, which served both as a selection tool and for initial data collection.
The data collection form (appendix 1), focused on the use and consent collection regarding sensitive data, proposed a particular emphasis on facial expressions in the context of digital marketing. The open questions were designed to explore the legal, ethical, and practical aspects of using facial data.

Results : 4 main topics

Face is very personal : Facial expressions are legally sensitive data
Experts unanimously agree that facial reactions are considered sensitive data under the GDPR. This classification is justified by the potential of these data to reveal profound personal information, including an individual's emotional and psychological state. This position aligns with Ekman's (1992) work on the universality of facial expressions while also considering more recent critiques by Barrett et al. (2019) on cultural influences in emotional expression.

Looking at faces : the need for a higher level of ethical precautions
There was a strong consensus on the necessity of obtaining explicit and informed consent before any collection of facial data. This requirement applies even when the analysis focuses on a specific emotion without video recording. This approach aligns with the ethical principles of respecting participant autonomy, as defined by Beauchamp and Childress (2019) in their bioethical framework. Furthermore, experts emphasise the importance of transparency throughout the data collection process, echoing Nissenbaum's (2020) recommendations on "privacy by design" in developing new technologies.

Research on faces : Even for a more flexible research context, a solid ethical framework is required
Experts acknowledge that certain flexibilities may exist within an academic framework, but they insist that fundamental data protection principles must always be respected. This stance is consistent with Markham and Buchanan's (2012) work on online research ethics, which underscores the necessity of continuous ethical reflection in rapidly evolving digital environments.
Therefore, in collaboration with legal experts, we have created a table outlining the necessary legal precautions for collecting facial data, as well as other sensitive data (Table 1).

Face… upon : an always lagging legislation behind technological innovations
According to the consensus reached by the experts, the law does not address these issues quickly enough and fails to anticipate the impact of new technologies. Experts highlighted a gap between the pace of technological innovations and the evolution of legislation. This observation aligns with Zuboff's (2019) findings on "surveillance capitalism" and the need for regulations that match new technological realities. In this context, experts stress the importance of a proactive approach by researchers and practitioners to anticipate the ethical challenges associated with using facial expressions in digital marketing.

Discussion : How Facial Expression Becomes an Ethical Tool in Digital Marketing ?

The expert survey underscored a notable consensus among legal professionals on the classification of facial expressions as sensitive data, particularly highlighting the ethical concerns related to their application in digital marketing. Central to this discussion is the issue of consent, which was identified as a crucial factor.

Theory : the essential nature of transparency in digital marketing

This study adds to the literature on digital marketing ethics by highlighting the fundamental importance of transparency, particularly in the use of data and emerging technologies. Transparency is an essential pillar for building and maintaining consumer trust in data collection and use practices, as emphasised by Bleier et al. (2020).
Transparency in digital marketing involves more than simply communicating information (Portes et al., 2020). It must include clear and accessible explanations of how data is collected and processed, and how it is protected. This is in line with the recommendations of the General Data Protection Regulation (GDPR) and the recommendations of the European Cyber Security Agency (ENISA, 2021), which stress the need for honest and full disclosure of practices.
When using technologies such as facial analysis, transparency becomes even more crucial. Not only must companies comply with legal requirements, but they must also adopt an ethical and responsible approach (Politou et al., 2018). Communication about how these technologies work, as well as the potential implications for user privacy, is essential to avoid any mistrust or loss of trust (Grewal et al., 2020).
Incorporating transparent practices into digital marketing is not only a legal obligation, but also a moral imperative to strengthen corporate social responsibility. The concept of 'ethical marketing', as proposed by Murphy et al. (2016), highlights the need for ongoing transparency throughout the data collection and use process. This approach promotes better protection of sensitive data and ensures ethical use of the information collected, thereby strengthening the relationship of trust with consumers.

Practice

Experts advocate for enhanced consent processes, detailing the objectives and methods of analysis, in accordance with the "privacy by design" principles proposed by Cavoukian (2011). As a managerial implication, this study provides a framework of applicable laws and legal guidelines for each stage of the research process (see **Table 1**).
Researchers and practitioners can use these guidelines to design ethical research protocols that comply with regulations, including clearly defining research objectives and limiting data collection to what is strictly necessary. They should also create detailed consent forms that explain the study's objectives, the methods used for facial expression analysis, and data protection measures.
The study highlights the disconnect between rapidly advancing technology and existing legislation, urging marketers to proactively address the ethical challenges of new technologies, particularly those involving sensitive data.

Conclusion

The experts pointed out a specific context of marketing research, revealing a perceived disconnect between existing legal frameworks and rapidly evolving technologies which emphasise the need to balance technological potential with core ethical principles in digital marketing. The study calls for further research to develop privacy-respecting methods for facial analysis and to evaluate the long-term impact of such technologies on consumer perception and behaviour.

The sensitivity of facial expression data emphasises the importance of obtaining explicit consent and maintaining transparency as essential for ethical research. It also brings to light the challenges posed by rapid technological advancements, reinforcing the necessity for strict ethical and legal compliance.

Moreover, the article addresses significant ethical implications not only for research but also for marketing practices. It emphasises the need for marketers to respect consumer privacy and ensure that facial recognition and analysis are not misused for manipulative or invasive purposes. In the realm of research, ethical considerations include ensuring that participants' data is handled securely and that their consent is informed and voluntary, particularly when dealing with sensitive data such as facial expressions.

To conclude, this research provides valuable insights for both theorists and practitioners striving to use facial expression analysis responsibly in digital marketing. It advocates for a proactive and ethical approach, aligning marketing practices with privacy and consumer rights. This issue contributes to the broader discourse on digital marketing ethics, aiming to harmonise the effectiveness of analytical tools with respect for privacy.

Table 1. Guidelines for an Ethical Research of Facial Expressions

Study stage	The Legal Justification is :	So you need to :
Definition of research objectives	Need to determine the precise purpose of data collection to ensure that it complies with the lawfulness requirements of the GDPR (Article 5) and the “Loi Informatique et libertés” (Articles 4 al. 2 and 5).	Collect Personal Data that be : ● Adequate ● Relevant ● Limited to what is necessary in relation to the purpose for which they are processed
Protocol design and methodology	Drawing up a protocol that complies with the transparency and ethical requirements defined by the GDPR (Article 12)	Determine on your protocol the purposes explicitly and legitimately. Moreover, you have an obligation of transparency, information and responsiveness to ensure the individual's rights.
Obtaining informed consent	Obligation to obtain the explicit consent of participants, in accordance with the GDPR (Article 7) and the“Loi Informatique et libertés”(article 5 al.1)	Be able to demonstrate that the data subject has consented to processing of his or her personal data. This consent might be given by a written declaration. In that case, the written declaration needs to be: ● Clear ● Easily accessible ● Written in plain language ● Separate from other matters
Data protection and security	Implementation of security measures to protect personal data against unauthorised access, in accordance with the requirements of the GDPR (Article 32 al 6) and the Loi Informatique et Libertés (Article 4).	Use technical measures to reinforce security such as: ● Pseudonymisation and encryption of personal data ● Ensure the confidentiality, integrity, availability, and resilience of processing systems and services. Restore timely access to personal data in the event of an incident

		● Implement a regular process for testing, assessing, and improving technical and organisational measures to ensure the security of processing. Do not forget that you have an obligation of protection and security of collected personal data. Nobody, except under controller authority (You), can process them.
Data analysis and processing	Processing of data in accordance with the conditions specified in the participants' consent (Articles 5 and 6 of the GDPR); and compliance with the limitations provided for by the GDPR (Articles 5, 6 and 9) and the “Loi Informatique et libertés”t (article 4 al. 6).	You must ensure that : ● your data is properly protected ● the process is legal and fair ● you have the explicit consent of the participants ● data collection is transparent ● data collection is anonymised
Publication of results	Publication of results in compliance with the principles of confidentiality and integrity, in accordance with the requirements of the CNIL and the European Union	You must ensure that : ● data collection is anonymised ● data collection is transparent ● you must limit yourself to the initial purpose of your present study (no use of data from a previous study in which the participants had not given their consent for the purpose of your current study).
Archiving and data management	Retention or destruction of data in accordance with the legal conditions, as defined by the GDPR (Article 89)	Retain Personal Data only for as long as it is necessary for the purposes for which the data is being processed. When data processing is complete, all data should be deleted. Note that it can be extended if the data is processed solely for archiving in the public interest, scientific or historical research, or statistical purposes.

References

Barrett, L. F., Adolphs, R., Marsella, S., Martinez, A. M., & Pollak, S. D. (2019). Emotional Expressions Reconsidered: Challenges to Inferring Emotion From Human Facial Movements. *Psychological science in the public interest : a journal of the American Psychological Society*, *20*(1), 1–68. https://doi.org/10.1177/1529100619832930

Bleier, A., Goldfarb, A., & Tucker, C. (2020). Consumer privacy and the future of data-based innovation and marketing. International Journal of Research in Marketing, 37(3), 466-480. https://doi.org/10.1016/j.ijresmar.2020.01.002

Cavoukian, A. (2011). Privacy by design: The 7 foundational principles. Information and Privacy Commissioner of Ontario.

Dupré, D., Krumhuber, E. G., Küster, D., & McKeown, G. J. (2020). A performance comparison of eight commercially available automatic classifiers for facial affect recognition. PloS one, 15(4), e0231968. https://doi.org/10.1371/journal.pone.0231968

Ekman, P. (1992). Facial expressions of emotion: New findings, new questions. Psychological Science, 3(1), 34–38. https://doi.org/10.1111/j.1467-9280.1992.tb00253.x

ENISA (European Union Agency for Cybersecurity). (2021). Recommendations on shaping technology according to GDPR provisions. https://www.enisa.europa.eu/publications/recommendations-on-shaping-technology-according-to-gdpr-provisions

Gillespie, T. (2018). Custodians of the Internet: Platforms, Content Moderation, and the Hidden Decisions That Shape Social Media. Yale University Press.

Appel, G., Grewal, L., Hadi, R., & Stephen, A. T. (2019). The future of social media in marketing. Journal of the Academy of Marketing Science, 48(1), 79–95. https://doi.org/10.1007/s11747-019-00695-1

Howard, A., & Borenstein, J. (2018). The Ugly Truth About Ourselves and Our Robot Creations: The Problem of Bias and Social Inequity. Science and engineering ethics, 24(5), 1521–1536. https://doi.org/10.1007/s11948-017-9975-2

Jack, R. E., Garrod, O. G., Yu, H., Caldara, R., & Schyns, P. G. (2012). Facial expressions of emotion are not culturally universal. Proceedings of the National Academy of Sciences of the United States of America, 109(19), 7241–7244. https://doi.org/10.1073/pnas.1200155109

Markham, A., & Buchanan, E. (2012). Ethical decision-making and internet research: Recommendations from the AoIR ethics working committee (Version 2.0). Association of Internet Researchers

McCambridge, J., Witton, J., & Elbourne, D. R. (2014). Systematic review of the Hawthorne effect: new concepts are needed to study research participation effects. Journal of clinical epidemiology, 67(3), 267–277. https://doi.org/10.1016/j.jclinepi.2013.08.015

Murphy, P. E., Laczniak, G. R., & Harris, F. (2016). Ethics in marketing: International cases and perspectives (2nd ed.). Routledge. https://doi.org/10.4324/9781315626642

Nissenbaum, H. (2010). Privacy in context: Technology, policy, and the integrity of social life. Stanford University Press

Politou, E., Alepis, E., & Patsakis, C. (2018). Forgetting personal data and revoking consent under the GDPR: Challenges and proposed solutions. Journal of Cybersecurity, 4(1), tyy001. https://doi.org/10.1093/cybsec/tyy001

Portes, A., N'Goala, G., & Cases, A.-S. (2020). La transparence numérique : dimensions, antécédents et conséquences sur la qualité des relations clients. Recherche et Applications En Marketing (French Edition), 35(4), 73-102. https://doi.org/10.1177/0767370120935734

Ohm, P. (2010). Broken Promises of Privacy: Responding to the Surprising Failure of Anonymization. UCLA Law Review, 57, 1701-1777. https://www.uclalawreview.org/pdf/57-6-3.pdf

Scherer, K. R., & Moors, A. (2019). The Emotion Process: Event Appraisal and Component Differentiation. Annual review of psychology, 70, 719–745. https://doi.org/10.1146/annurev-psych-122216-011854

Voigt, P. and Von dem Bussche, A. (2017) The EU General Data Protection Regulation (GDPR): A Practical Guide. 1st Edition, Springer International Publishing, Cham. https://doi.org/10.1007/978-3-319-57959-7

Appendices

Appendices 1. Questionnaire

PARTIE 1 : Données faciales et législation

1. En quoi les réactions faciales peuvent-elles être considérées comme des données sensibles, selon vous ?
2. Pourquoi utilise-t-on le terme "données sensibles" lorsqu'on parle des réactions faciales ?
3. Quels types d'actions en justice les consommateurs ont-ils pu entreprendre en lien avec les données faciales ?
4. À votre avis, comment le GDPR protège-t-il les données faciales par rapport à d'autres types de données ?
5. Si un outil d'analyse faciale permet de détecter une émotion sans enregistrer de vidéo, comment percevez-vous la sensibilité de ces données ?
6. Selon vous, comment la législation actuelle accompagne-t-elle les innovations dans le domaine des données faciales ? Est-ce suffisant ?

PARTIE 2 : La collecte du consentement en matière de données sensibles

1. Quelles informations, selon vous, devraient être communiquées à une personne lorsqu'elle est filmée ?
2. Quelles sont, d'après vous, les mesures supplémentaires à prendre pour garantir un consentement éclairé (écrits, signatures, etc.) ?
3. Quels sont les niveaux de consentement nécessaires pour filmer une personne selon vous ? Comment ces niveaux peuvent-ils varier en fonction du contexte ?
4. Comment pensez-vous qu'on devrait informer l'individu tout au long de l'enregistrement, que ce soit par signalétique ou par rappel oral ?
5. En quoi le niveau de consentement requis pourrait-il varier en fonction du nombre d'émotions recherchées ou du type d'analyse menée ?
6. Comment la nature de la mesure des expressions faciales (comme l'intensité, la fréquence ou la diversité) pourrait-elle influencer le niveau de consentement nécessaire, selon vous ?

PARTIE 3 : Données sensibles et recherche

1. À votre avis, la réglementation est-elle plus souple lorsqu'il s'agit de recherches utilisant des données sensibles ? Dans quelles conditions ?
2. Quelles sont les précautions ou conditions spécifiques qui devraient, selon vous, être respectées dans une étude de recherche sur les données faciales ?
3. Pensez-vous qu'il soit nécessaire d'informer les participants sur les outils utilisés dans le cadre de la recherche ? Pourquoi ?
4. Comment concilier la transparence envers les participants et la protection des accords avec les tiers lorsqu'il s'agit de mentionner un outil ou un partenaire spécifique ?
5. Quels conseils donneriez-vous en ce qui concerne les méthodes de collecte et d'analyse des données faciales dans un contexte de recherche ?