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3D online environments: ethical challenges for marketing research

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Abstract

Purpose – The purpose of this paper is twofold: to provide an overview of related studies and to highlight research gaps and questions that need to be addressed. Research conducted in three-dimensional (3D) online environments constitutes a different research context, not least because it involves the recruitment of avatars in the research process. Researchers need to appreciate better the ethical concerns that arise in this novel, fast-evolving context and how these concern different stakeholders.

Design/methodology/approach – The paper employs an interdisciplinary desk-research approach. It critically reviews related literature, highlights the involved stakeholders, discusses ethical issues from a marketing research perspective and concludes with a discussion of related studies and research gaps, providing direct future research avenues.

Findings – The characteristics of the 3D online environments and the behaviour and experiences of their users set the boundaries and guide the way regarding the ethical research in this context.

Research limitations/implications – The paper does not present primary empirical results, instead it reviews and critiques related literature in 3D online environments and sets the agenda for future research.

Practical implications – The paper provides ethical guidelines and identifies blurred areas in conducting or participating in research in 3D online environments.

Originality/value – Based on earlier studies and examples of ethical concerns when studying 3D online environments, this paper emphasises the parameters that should be taken into consideration in current and future research studies.

Keywords Stakeholders, Virtual worlds, 3D online environments, Ethical issues and guidelines, Marketing research

Paper type Viewpoint

1. Introduction

This paper presents a review of studies conducted in Virtual Worlds (VWs) and in three-dimensional (3D) online environments, which investigate the ethical issues in this context. Of particular interest to our review is marketing research taking place in these innovative IT-enabled environments, since they are relatively recent and therefore set new challenges for conducting ethical research. The issues presented in this paper apply

to other related disciplines that follow similar qualitative and quantitative methodologies for conducting research.

VWs emerged in the early 2000s, first as gaming-oriented or social networking platforms (Messinger *et al.*, 2009). VWs are 3D environments where users interact through avatars, which constitute their representatives (Krasonikolakis *et al.*, 2011). While at their inception VWs were embraced primarily by virtual gaming communities, a considerable number of VWs soon adopted characteristics and applications of social networks and e-commerce (Messinger *et al.*, 2009). For example, "residents" of those environments develop their own virtual houses (interior and exterior decoration), means of transport, clothing, organise entertaining events, set goals that should be achieved by the members of the community or even develop their own virtual stores where they sell virtual or real products/services (V-Commerce). The commercial activity in VWs prompted real-world businesses and retail stores to consider these environments as a new, alternative retail channel (3D-Commerce). Moreover, there were cases where real-world brands developed a 3D version of their websites to exploit the characteristics offered by this technology to enhance customer experience and better meet their consumers' needs. In this paper we focus on these latter types of VWs and 3D online environments, excluding purely game-oriented environments such as World of Warcraft from the scope of this research.

3D online environments are gaining momentum and for that reason academia call for further research (e.g. Novak, 2010, pp. 29-31) as it is believed that new ethical, technological, legal and other issues will arise (Hendaoui *et al.*, 2008, pp. 89-92). VWs are considered a new alternative marketing channel that has been labelled "V-Marketing" (Hendaoui *et al.*, 2008, p. 89). In this novel environment, academics and practitioners are interested in how existing theories, methodologies and social and ethical research are applied, particularly in the marketing field (Messinger *et al.*, 2009, p. 224). The disciplinary orientation, the methodological preferences and the basic research questions are, according to McKee and Porter (2009, p. 7), the key dimensions for researchers studying these environments. This paper reviews ethical studies in 3D online environments, emphasising the role and behaviour of users, researchers, practitioners and ethical committees. An additional aim of this paper is to provoke discussion among researchers regarding the ethical concerns and principles for conducting research in marketing, information systems and related disciplines.

Reviewing the literature, we note that there is limited and sometimes controversial discussion, at least in marketing, about the ethics of conducting research. On the one hand, there is a stream of academic researchers and practitioners that signal the dilemmas in terms of troubling ethical behaviour (Lund, 2001, p. 65; Chonko and Hunt, 2000, pp. 237-238). They primarily focus on two dimensions: the strategy followed in conducting marketing studies and the unethical use of research data (Philips, 2010, pp. 275-256). On the other hand, Aggarwal *et al.* (2012, p. 463) claim that in the past 20 years, both academics and practitioners have been sensitised about ethical issues and disapprove of unethical conduct in the research process orchestration or in the misuse of data.

One of the reasons why the ethics that researchers follow when they investigate marketing phenomena matter is their impact on markets. For example, there is a case study in South Korea (Lee, 2005) where ethical marketing influenced groceries markets (Tsukamoto-Wagner, 2009, p. 41). Yet, Anker *et al.* (2010, p. 518) consider that even one

of the latest definitions of marketing (AMA, 2008) focuses on formalisation and processes, missing on emotion and thus failing to instil the importance of values to customers.

Ethics as a concept is dynamic and changes over time (Schultze and Mason, 2012, p. 301). Of interest to our work are two forces, namely technologies and knowledge, as they affect and alter ethical values and dimensions. In this regard, ethical issues should be reviewed regularly (Schultze and Mason, 2012, p. 301). Moor (2005, p. 118) notes the importance of the multidisciplinary dimension in attempting to provide "better ethics". He considers ethics, science, social science and technology as the various disciplines that should be brought together to provide better ethics (Moor, 2005, p. 118). The latest developments in technology are considered another important factor that should be taken into consideration in performing sophisticated ethical studies (De Saulles and Horner, 2011, p. 206) or developing ethical frameworks (e.g. Harris *et al.*, 2009). The use of innovative technologies in marketing research has influenced, among others, the data collection process (Aggarwal *et al.*, 2012, p. 464).

This paper is structured as follows. Section 2 presents an overview of recent studies that specifically acknowledge or study ethical issues in VW environments. Building on this work, the ethical issues and studies that are inextricably linked with the distinct characteristics of 3D online environments and VWs are presented in Section 3. The following sections focus, in turn, on the ethical issues as they relate to the behaviour, agendas or habits of the key stakeholder groups in VWs: users/consumers, researchers, managers and ethics committees. The final section presents the conclusions, implications and future research directions.

2. Empirical findings on ethics in 3D online environments
A desk research approach was followed to illustrate the available empirical research findings on ethics in VWs and 3D online environments. A summary of 14 published empirical studies investigating the importance and norms of ethics in these environments is presented in Table I. The Table shows, in chronological order, research published between 2008 and 2013. While different theoretical frameworks and methodological approaches have been employed, these studies acknowledge the importance and implications of ethics on users/consumers in these environments.

This research makes clear the growing interest and the multiple open ethical issues in VWs. Issues of avatar identity, ethical dilemmas for decision makers and the interrelation of the virtual and the real constitute some of the primary issues highlighted in extant research. To understand and explore these ethical issues in more depth, we review their relevance and importance for the key stakeholders involved. We start, in the next section, by reviewing how the 3D environment can be characterised as a stakeholder, as it sets a novel research context with characteristics and affordances that influence the set of ethical issues that may arise.

3. 3D online environments as a novel research context
The characteristics of 3D online environments, as we describe in detail in the following paragraphs, either set the norms or influence all involved parties. Thus, the environment itself is recognised as one of the stakeholders in the formulation of ethical norms and guidelines.

Citation	Methodology/design	Key findings
McArthur (2008)	Desk research	The paper reviews the ethics and appearance of avatars in VWs and points the importance of revision and update of norms when conducting research which involves avatars
Boostrom (2008)	Ethnographic study	The study investigates the dimensions of reality in VWs and the role of socialisation and identity. It provides guidelines for conducting marketing (e.g. consumer behaviour) and social research
Boellstorff (2008)	Ethnographic study	Compared to other studies this paper suggests that VWs should not be considered as public or private, but as third spaces with distinctive characteristics. Also, the importance of "grieving" and the consequences of that in the real identity are discussed
Hendaoui et al. (2008)	Desk research	The paper summarizes key research issues in VWs, acknowledges the emergence of metaverse market and forms social, political, technological, business, communication and educational questions that should be addressed in the coming years
Pace et al. (2009)	Quantitative and critical analysis of the paradigmatic structure of interfaces	The appearance of the avatars in VWs had direct influences on the real life of the members of social communities
McKee and Porter (2009)	Interviews with experts in the field (researchers) and desk research	The paper emphasizes the difference of conducting research in physical environments and virtual worlds; the difficulty in considering a virtual place public or private; the importance of privacy of inhabitants; the transparency in the research process
Eynon et al. (2009)	Desk research	The paper discusses the ethical dilemmas paying particular emphasis on the new methods that need to be developed to facilitate research in virtual environments. The paper provides guidelines for the development of professional and institutional ethical patterns
Grimes et al. (2009)	Desk research	The paper reviews the ethical dilemmas in research with human beings, the difficulties and uniqueness of investigating humans in VWs and provides examples to illustrate the complexity of ethical issues in VWs

(*continued*)

Table I.
Key studies on ethics
in VWs and 3D
online environments

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Table I.

Citation	Methodology/design	Key findings
Rosenberg (2010)	Ethnographic study and 5 focus groups	The study conceptualizes the influence of public vs private spaces on the identities of avatars and their interactions, and emphasizes the responsibilities of online researchers in terms of privacy
Minocha et al. (2010)	Desk research	The paper describes experience from two empirical studies in VWs and sets boundaries and ethical guides for researchers who pursue empirical investigation of VWs
Vanacker and Heider (2012)	Case study	The life in the VW "Second Life" has "real implications". People that see their avatars as extensions of their selves are more likely to be harmed by ethical norm violation
Schultze and Mason (2012)	Desk research	The paper develops a framework to guide researchers (academic or professionals) and ethic committees when dealing with human subjects in online environments (both 2D and 3D)
Buchanan and Zimmer (2012)	Desk research	The paper explores ethical frameworks based on consequentialism, utilitarianism, deontology, virtue, ethics and feminist ethics
Jerry (2013)	Desk research	The paper analyses and compares the various research methods in VWs by placing emphasis on those where human beings are involved

Palese (2013, p. 74) describes the influence of the environment and the forces upon it, on forming individuals' notions and in turn actual behaviours. He considers the forces of global markets as threatening for individuality and the opportunity to construct personal needs and wishes. His conclusions are rather pessimistic, stating that in the new era of the Internet, of things where a chip may be set under the skin, the sense of free choice and the sense of humanity are questioned. In the 3D context, individuality is sometimes lacking. A comparison of a typical shopping trip on a 2D online website and a store which is located in a VW illustrates the differences of the new medium. Users/consumers may visit various 2D online stores through their PC/laptop and still retain their anonymity by deactivating cookies and by not visiting websites which by default trace and capture visitors' actions. In VWs, since the avatar is the user's/consumer's representative in the VW, the preferences and personal needs of the consumer can be identified through the avatar's appearance. Furthermore, the appearance of an avatar may be uniquely linked with its user. This example constitutes one facet of threat of individuality. Another facet which sets obstacles on individuality is the crowding dimension. The one to one interaction (store <-> consumer) which occurs in a 2D store is not the norm in a store which is located in a VW, since there may be more than one avatars in the same store at the same time. In that case, the users/consumers may be identified through their avatar characteristics by other consumers or employees (i.e. avatars working as employees-salespersons at that particular store) which are in the store at the same time.

The penetration of the Internet shook up the marketing research landscape (Aggarwal *et al.*, 2012, pp. 464-465). People are likely to consider differently the beliefs and values of research in the online environment compared to the traditional, physical environment (Shankar *et al.*, 2003, p. 153). The same stands for all information and communication and VWs in particular (Pace *et al.*, 2009, p. 194). The development of specialised platforms and applications, on the one hand, excludes individuals who do not have the necessary skills and, on the other hand, conveys the behavioural and cultural beliefs of the designers and developers of these systems (Pace *et al.*, 2009, p. 194). In this regard, while there are cases where the moral values related to the offline and the online environments are different, in other cases, values and ethics from the traditional environments are also transferred to the online environment. Furthermore, the control over how ethical values that are related to the traditional environments, apply to the virtual context, is also debatable. For example, Hendaoui *et al.* (2008, p. 91) report a conviction of a programmer in Texas for his virtual job services which he was not legally authorised to offer, and they highlight the importance of conducting further research in ethics related to mass virtual marketing and viral virtual marketing.

Another factor that influences the degree and percentage of participation in information and communication fields is the view that these fields are dominated by men (Stross, 2008) who are the designers and consumers of the products and services developed in these businesses (Gorriz and Medina, 2000, pp. 44-48). Oleksy *et al.* (2012, p. 116) consider this practice as "ethically unacceptable simplification" and propose that artificial intelligence products should not be designed and produced in a way that "humanity" is not intrinsically linked to "masculinity" and that Western standards of gender equality should be adopted.

The designers and developers of 3D online environments and communities determine the capabilities and permitted actions and behaviours within these

environments (Pace *et al.*, 2009, pp. 194-195) and consequently the ethical values that prevail (Sicart, 2005). As a result, the degrees of freedom and the availability of a considerable amount of choices in a virtual community have an effect on ethical decision making (Vanacker and Heider, 2012, p. 73). Boostrom (2008, p. 9) raises this issue taking as an example the VW "Second Life" which is considered a leader (Shin, 2008) in 3D virtual communities. He claims that there are community standards that are enforced by the developers of the VW and other "localised" rules generated by the in-world inhabitants. The residents of those communities have to comply with the capabilities of and actions permitted within those environments. The effect of these principles and practices is twofold. First, individuals are enforced to comply with rules of debatable morality (in ways which are not applicable in 2D online environments), and second, the risks involved with the transfer of practices from the virtual to the real world, which may be harmless in the virtual but may damage real-world ethical norms. For example, there is extensive literature regarding the aggressive real-world behaviour of individuals who play online (2D or 3D) games where violence (e.g. killing others in the game) is a dominant characteristic of these games. When the VW "Second Life" was initially launched, one of the quotes used by marketers to promote the VW was the fact that residents of this VW would have the opportunity to escape from the real life and live their dreamy "second life". However, while in some cases the residents do not admit that, real life norms were adopted in the VWs as well. For example, it is considered unethical for an avatar to walk around undressed in a store selling virtual clothes for avatars. Dressing rooms are available to try on clothes instead. While this scenario does not imply any harmful or damaging behaviour, there may be other cases with critical and crucial implications. Such an example is the case published in the press where a woman found her husband's avatar making love with another avatar, and she managed to reach a settlement in favour of her during the sitting of the real court (MailOnline, 2008).

A final set of ethical issues related to the virtual context concerns the considerable debate on what may be considered public or private (e.g. Bromseth, 2002). It is worth investigating the degree to which the virtual places that someone visits within VWs or the text or voice conservations between or among avatars are regarded as public or private. It has been argued that traditional (2D) online environments, due to the use of the Internet, are by definition public, so that it is not just the practices that participants or members of the specific online environments consider public that are open to public scrutiny (Sveningsson Elm, 2009, pp. 74-75; Rosenberg, 2010, p. 24). Following this argument, McKee and Porter (2009, p. 6) suggest that as anyone is likely to reach virtual places, VWs are public, while Rosenberg's (2010, p. 28) analysis shows that inhabitants of virtual places articulate their wish for private "virtual" life (e.g. places visited and conversations). Boellstorff (2008, p. 181) states that VWs should neither be considered as public nor as private places, but rather as "third places", and Sveningsson Elm (2009, p. 75) presents the concepts of public and private as a range of four dimensions: "public", "semi-public", "semi-private" and "private". If we take into account empirical research conducted in these environments, the design of a virtual place is likely to influence participants' opinions and attitude and therefore bias the data collection process (Stewart and Williams, 2005, p. 406), as is the case in traditional environments. In the next section we study the ethical dilemmas that VWs may create for participants.

The following sections look into ethical dilemmas and issues for the key human stakeholder groups of VWs, namely users/consumers, researchers, managers and ethics

committees. We take into account the characteristics of 3D environments that have been outlined in this section, but also ethical issues identified in earlier research in information systems and marketing that concern these stakeholder groups and were relevant for the physical or 2D online world. These complementary aspects of earlier research are used to help us formulate a more holistic appreciation of ethical issues that have arisen – or can arise – in the new, 3D online context.

4. Users/consumers in the 3D environments

Individuals visiting 3D online environments, in addition to being users of an information system, are likely to be consumers as well. This dual user/consumer role becomes entangled in the subjective ethical dilemmas they face. The behaviour and preferences of users/consumers in online environments are considered the antecedent for the investigation of related ethical phenomena, as the public is a key stakeholder (Aggarwal *et al.*, 2012, p. 465). A quite popular approach among researchers regarding the ethical values, concerns and attitudes is the study of the virtual and (or versus) the real "identity" (e.g. Nyberg, 2009; Grimes *et al.*, 2009; Schultze and Mason, 2012; Spence, 2012; Odwazny and Buchanan, 2011; Fairfield, 2011). Vazire and Gosling (2004, p. 124) define identity as "symbolic statements made by individuals about how they would like to be regarded; these statements may be directed at the self or to convey messages to others". Schultze and Mason (2012, p. 305), studying the behaviour of cyborgs, that is, humans with a "technology extension" (Introna, 2007, p. 9), state that their virtual psychological approach and orientation are linked with the real person, while Spence (2012) investigated the ethical concerns and values transferred from the real environment to the virtual. Boostrom (2008, pp. 12-14) reports that the attempt to form and project a specific identity is related to the particular group where someone wishes to belong to, and calls for further research on this topic (Boostrom, 2008, pp. 17-18; Hendaoui *et al.*, 2008, pp. 89-92). In the same vein, Pouloudi (2012, p. 321) emphasises the bidirectional influence between the human and the cyborg. However, there is also debate about the "healthy" development of identity. For example, Bargh *et al.* (2002, p. 34) state that the anonymity provided helps individuals develop their desirable identity without taking into consideration norms and beliefs in the "real" world, while Suler (2004, p. 322) emphasises the likelihood of a fragmented identity if someone develops different identities associated with the respective environment. Following a human-centred approach, Rosenberg (2010, p. 28) considers virtual identity as the representation or even extension of the human. She claims that the avatar has a body and a face, and can walk around, make gestures or even hug someone else. To strengthen her statement she mentions an incident in the VW Second Life where avatars were stating in their profiles that "behind every avatar is a real person".

The link between the behaviour of the real user and the behaviour of its avatar or virtual body has been subject of many research studies (e.g. Slater, 2002; Nowak and Biocca, 2003; Schultze and Mason, 2012). Hendaoui *et al.* (2008, p. 91) question the role of avatars in the future of social VWs by stating that while the avatars are anonymous, it will be quite difficult to maintain multiple different personas and attitudes. Nonetheless, it is possible to have multiple users behind an avatar (White, 2002, p. 64) or multiple avatars behind one user. The only available information someone has at first is the appearance of the avatar (Belisle and Onur, 2010, pp. 747-748), which is likely to provide a first glimpse of the user. Gee (2003) combines the terms user/player, avatar and

identity, and argues that a user has three identities. The one is that of the real (user's), the other the virtual (avatar's) and the third identity is the intermediary where the actions of the avatar are based on the ethical values of the real identity. Similarly, Woolgar (2002, pp. 14-20) and Pace *et al.* (2009, pp. 194-197) highlight the reverse argument, whereby the real life of the avatar's user is influenced even if the avatar is offline. In this vein, Yee and Bailenson (2007, pp. 285-287) point that the avatar influences the behaviour of its user, even long after the avatar use.

A user has numerous capabilities as far as avatar creation and development is concerned. He/she may change and adjust the external features of the avatar, and/or its socio-demographic characteristics (Belisle and Onur, 2010, p. 742). The users may create avatars that resemble themselves or create fantasy characters or cartoons; all these decisions influence the degree of realism (Nowak, 2004). Similarly, in case users decide to create avatars with a human appearance, they have to decide about the sex of the avatar too. In terms of gender effects and differences, academia agrees that women make more ethical judgments (Kelley *et al.*, 1990, p. 684) and this has been noted for men and women marketing professionals in particular (Lund, 2008, p. 501). Lund (2008, pp. 510-511) calls for further research leading to framework development of these issues, taking into consideration the current online environments formulation.

Castronova (2005, p. 20) considers that 3D online environments and VWs will become a new field for marketing because they offer interesting and engaging experiences. It has been argued that marketers, researchers and academics should respect the norms and ethics of the VWs and their behaviour should be consistent with the rules and habits of the inhabitants (Boostrom, 2008, p. 4). Residents of VWs are sometimes quite sensitive with all intruders that do not respect the place they visit or do not conform to its rules. Such occurrences are described as "griefing" (Boellstorff, 2008, p. 31); it is the deliberate act of someone which negatively influences the experience of others in VWs.

5. Researchers' attitude and goals

Academics in marketing research are considered among the leaders in acknowledging the relevance and importance of ethical issues (Bernardi *et al.*, 2008, pp. 157-159). This is because in most cases their research design – whether exploratory (qualitative or quantitative) or conclusive (descriptive or causal) – involves human beings in the research process. Indeed, marketing researchers typically investigate the influence of different conditions of a variable (e.g. the layout/design of a store) on consumer behaviour (e.g. impulse buying behaviour). As a result, marketing researchers have developed several protocols for addressing ethical issues, including the development of decision making procedures, models and guidance lists (e.g. Hair and Clark, 2007). While there is a large number of studies investigating ethical issues in online environments (e.g. Hine, 2005; Sloan, 2005; McCreary, 2008; Nairn, 2009), there is a stream that calls for further research (e.g. Minocha *et al.*, 2010; McCreary, 2008; Eynon *et al.*, 2009) as it is a constantly changing field over time (Schultze and Mason, 2012, p. 301).

The debate for the distinction between public and private places in virtual environments has been mentioned in the previous section. However, expectations related to the ethical norms that researchers should follow is far from being consolidated, or even articulated. A possible trap occurs when the research subject does not share the same principles with the researchers, or if ethical issues are not clear to participants, especially concerning the places, the actions and the activities that are

private and those that are public (Bakardjieva and Feenberg, 2000, p. 233). Jerry (2013, p. 5) rhetorically questions whether it is ethical for a researcher to record what is happening in a place that is considered public. Grimes *et al.* (2009, p. 48) encourage researchers to investigate prior to their study whether the members of the virtual place consider the place as public or private. However, it is reported in literature that there are cases where researchers are more concerned about marketing ethics than consumers are (Aggarwal *et al.*, 2012, p. 479).

A related issue which is considered an important topic in a number of studies recently, is the privacy of the users/consumers (Bogdanovic *et al.*, 2012, p. 208; Fuchs, 2011, p. 221). As is the case in the mobile context as well (e.g. De Saulles and Horner, 2011), in the new digital era everyone has the capability of recording and spying on video, audio and text formats. This phenomenon, in conjunction with the capability of associating the real life person with the avatar, influences someone's privacy and has been reported several times in the press (Sloan, 2005). In addition, the sharing of demographical and other personal data of another avatar should not be allowed (Jerry, 2013, p. 6). It has been argued that researchers should follow the policy and terms of use formed by the community they are going to conduct their research (Grimes *et al.*, 2009, p. 47), so as not to violate the in-world rules (Minocha *et al.*, 2010, pp. 13-18). Behind the avatars in 3D online environments, there are human beings and should be treated with respect (McKee and Porter, 2009, p. 33). Deepwell (2010) emphasises the manners of researchers, pointing that an inappropriate behaviour of a researcher is likely to have an impact on other researches in the specific virtual place.

Other critical ethical topics in marketing research include whether the researcher should make his/her identity known up front, whether he/she should be part of the community he/she observes or studies and the ways followed to approach participants. For example, Minocha *et al.* (2010, p. 7) took advantage of the information on the avatars' profile as criterion for recruiting participants. However, it is debatable whether this approach violates avatars' privacy or not. They also consider that researchers should be part of the community long enough before they start conducting their study. Hine (2000, pp. 13-14) encourages researchers to complement the profile of their avatar with real information regarding their role, scope of the study and affiliation, and Deepwell (2010) proposes that the avatar of every researcher should make its identity known. Jerry (2013, pp. 4-5) notes that in observation studies where the researcher becomes an integrated part and active member of the community, the degree of freedom in data collection is debatable. McKee and Porter (2009, pp. 33-34) and McArthur (2008, pp. 3,319-3,320) state that while the aforementioned issues have been widely studied online, there is need for further research on a new basis, taking into consideration the characteristics of 3D online environments (cf. Section 2). Eynon *et al.* (2009, p. 187) consider that experimentation in virtual environments and observation generate new ethical issues. They emphasise the difference of conducting an interview in a traditional environment and in a virtual one. They mention the example where a participant may face a difficult situation and due to lack of distance proximity in a virtual environment, the researcher is unable to help. Finally, as there is a great amount of minors who take part in virtual communities, Grimes *et al.* (2009, p. 44) draw researchers' attention to the need of obtaining parent permission before the interview.

The combination of graphics, voice and text is acknowledged in studies conducted in virtual environments, and the virtual reality provides a superior experience and

discussions that lead to rich data collection and in-depth analysis. However, Minocha *et al.* (2010, pp. 14-15) bring to the table the ethical dilemmas that arise from the use of the avatars' voice, which can provide information on sensitive demographic data. There are thematic VWs where users are encouraged to project a fictitious identity (Ducheneaut *et al.*, 2009, p. 1,151), and the avatars' voice may reveal the real identity of the user against the avatars' will (Wadley *et al.*, 2009, p. 3).

6. Managers

Managers and marketers who either own a store in a VW or a 3D environment or are employees of that types of store are grouped in this stakeholder category. The high level of marketers' ethical concerns has been acknowledged by Aggarwal *et al.* (2012, p. 476) who consider that both practitioners and academics have been sensitised to ethical issues for the past 20 years. A probable explanation for this shift are the social and business changes in recent years (Aggarwal *et al.*, 2012, p. 464), or the great amount of scandals publicised that turned people towards more ethical behaviours (Spake *et al.*, 2007, p. 33). Increasingly, the power of social media and word of mouth forces managers and marketers to take ethical concerns more seriously. In VWs where virtual communities and societies have been developed, word of mouth is a critical dimension. Singhapakdi *et al.* (1995, p. 49) report that ethics is considered by practitioners as a key determinant of corporate success. However, it is likely that there may be conflicting areas regarding the ethical viewpoint between these two groups (Aggarwal *et al.*, 2012, pp. 463-465).

A topic that is important to international marketing and is applied to 3D online environments is the appropriate handling of cultural effects. From a business perspective, marketing communications and activities may lead to infringement of privacy and harm the relationship with the customer (Zhu, 2009, p. 520). This topic is more prominent in 3D online environments where the cultural boundaries are vague. For example, the presence of various avatars from different ethnic origins in the same place at the same time is common in VWs. The lack of personalisation and customisation due to the nature of the environment complicates the targeted application of activities. Another blurred area regarding the application of ethics is the use of the latest technological developments by companies, such as RFID, to investigate consumers' behaviour without prior consent of the consumers (Albrecht and McIntyre, 2005). Finally, McArthur (2008, p. 3,318) states that in the context of VWs it is likely that an employer asks from the avatar-employee an appearance similar to the real-world appearance, signalling that the degree of control of employers over employees may be extending beyond the workplace.

7. Ethics committees

Ethics and research governance online entities such as Universities' boards that manage research submissions and applications are considered another stakeholder whose decisions have an effect and form the ethical context in virtual environments. Minocha *et al.* (2010, pp. 9-10, 12) conducted research in VWs and describe their experiences with their ethics committee. They indicate as important parameters that need to be adjusted, the protection of the privacy and dignity of the avatars both in public and private spaces, the collection and storage of the data, the confidentiality and anonymity protocols and the process and guidelines for taking pictures within VWs. They also

state that the ethical guidelines that organisations (e.g. the British Educational Research Association, the British Sociological Association and the British Psychological Society) provide both in traditional and online research may also apply to virtual environments. Jerry (2013, p. 3), based on his experience conducting research in the VW Second Life, claims that the traditional ethical issues should be taken into consideration in virtual environments in a way that damage should be minimised, and that researchers are accountable to their institutional review boards. In the same vein, Buchanan and Zimmer (2012) draw researchers' attention to the "Code of Federal Regulations" which provides guidelines applicable for researchers conducting research in virtual environments. Grimes *et al.* (2009, p. 41) point to the document entitled "Ethical Decision-Making and Internet Research" by the Association of Internet Researchers which guides researchers to conduct online research taking into account ethical issues. However, they consider that its contents are insufficient to cover issues related to virtual environments and call for further research on this topic.

8. Conclusions and future research issues

This paper identified relevant stakeholders for identifying and studying ethical issues related to 3D online environments drawing from relevant literature in the marketing, computing, information systems and business ethics fields. The aim of this study has been the consolidation of the documented ethical guidelines and challenges for research in 3D online environments and especially in VWs with emphasis on marketing research. However, the remarks and conclusions also apply to other disciplines which adopt similar methodologies for conducting research. While an exhaustive review and presentation of ethical concerns and guidelines seems unrealistic, not least because new issues arise on the use of virtual environments and relevant research studies expand, this study shows the perceptions of characteristics of 3D online environments vary, as well as the perception of what constitutes admissible behaviour and the experiences of users and researchers.

In addition to the characteristics of each 3D environment and its residents' behaviour, the list of stakeholders includes academic researchers, practitioners and ethics committees. While there is an ongoing stream of research regarding ethical issues in virtual environments, academia encourages further research in this fast-evolving and constantly changing environment (e.g. McArthur, 2008, pp. 3,319-3,320; Hendaoui *et al.*, 2008, pp. 89-92; Aggarwal *et al.*, 2012, p. 479) to build new concepts and frameworks. Put eloquently by McArthur (2008, p. 3,319), most of the ethical guidelines are adopted by the physical and 2D online environments, but the virtual context will lead to a real shift to research. By reviewing the ethical issues in 3D environments for different stakeholders, this paper contributes to research in this field by showing the current agenda and emergent issues. The paper thus seeks to inspire future research on ethical issues in the exciting research context of VWs. It is clear that a topic that remains open for research are the implications of avatar identity, as multiple theoretical angles from sociology, business ethics and psychology can provide additional insights. Having organised our paper around the different stakeholders engaged directly with 3D environments, though, we would like to stress the opportunity for empirical research that acknowledges the diverse stakeholder agendas and interests. Extant empirical research has focused mostly on the perspective of users. Understanding the perceptions

of managers, researchers and ethics committee members promises to be a fruitful field for further study, as the divergence of views is likely to highlight areas where further moderation or intervention may be needed.

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