CHAPTER 8

Serious Games, Stealth Interventions and Accounting Ethics

A reflective essay

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ABSTRACT

With the accounting profession actively seeking new ways to enhance ethics training in higher education as well as foster the ethical sensitivities of practicing professionals, there are mixed views on the effectiveness of current ethics training programs. It is generally believed that ethics training for practicing accountants is more effective when participants can have immersive experiences with ethical dilemmas in a natural setting. To date, enhanced immersive training experiences have largely been achieved through hypothetical scenarios, rather than real settings.

The argument for this paper is in the use of a newly designed serious game of ethics, Bogart, to provide players with an immersive and potentially impactful real world experience. Providing immediate feedback is a distinctive feature of serious games, which enables players to ascertain the consequences of each of their decisions. This is a particularly useful feature for ethics education. However, unlike most other games Bogart uses stealth interventions and misplaced rewards. While these were intentionally designed to add a further pedagogical dimension to the context and bring about interesting consequences, there were outcomes

that we had not foreseen. In this paper, we provide a personal narrative of the design choices and implications that only became obvious in the pilot testing phases and beyond. We draw on Kaufman and Flanagan's (2015) 'embedded design' approach to serious games design and the business ethics literature to reflect on the consequences of the design choices we made whilst developing Bogart.

While the game design choices followed pedagogically appropriate and peer-reviewed pathway techniques, we still encountered numerous implementation issues and a number of unintended ethical consequences.

INTRODUCTION

The field of business ethics and ethical decision making is receiving increased attention. Particularly, given the propensity for corruption and evidence of unethical corporate behaviour and illegal activities of individuals throughout the world. Fraud and corruption brings enormous costs, to not only consumers, employees, suppliers, shareholders, but all business and societal stakeholders. Efforts to mitigate this behaviour includes tightened legislation, increased surveillance, whistleblowing policies and ethics education. The accounting profession is active in monitoring accounting irregularities and unethical business behaviour through standard setting, auditing practices and codes of practice that guide professional accountants. Accounting educators argue that ethics training is essential in higher education (HE) and practice (Jackling et al., 2007; Ariail et al., 2020) and can impact the ethical sensitivity of graduates and practicing professionals (Martinov-Bennie and Mladenovic, 2015), particularly when combined with a positive work environment (West, 2017). Nevertheless, while ethics training might support students' awareness and ethical intentions, there are mixed views on the effectiveness of ethics training programs (Pierce and Sweeney, 2010; Cameron and O'Leary, 2015; Arfaoui et al., 2016). It is generally believed that ethics training for HE students, graduates and practicing accountants is more effective when participants can have immersive experiences with ethical dilemmas in a natural setting, however to date, enhanced immersive training experiences have generally been achieved through

adding detailed storylines in case study vignettes or hypothetical scenarios (Nguyen and Dellaportas, 2020).

In this paper, we argue that serious games can add value to ethics training by the way their digital gamified techniques are wrapped around pedagogical content and clever storylines that expose students to complex wicked problems. In communicating difficult subjects through a unique medium, serious games are ideal "for reflecting on social, ethical and political questions" (Darzentas & Urquhart, 2015, p.805). Serious games offer "a rich field for a risk-free, active exploration of serious intellectual and social problems" (Abt, 1987, p.13). We draw on Schwartz's (2016) ethical decision making processes and the serious games design choices that effect behavioural change. In particular, we use Kaufman and Flanagan's (2015) 'embedded design' framework of *intermixing*, *obfuscating* and *distancing* interventions in gameplay design, in the development of Bogart, our serious game of ethics.

We provide a narrative of experiences that reflect on the ramifications of our stealth design choices during the Bogart build and pilot testing phases. In revealing the potential effectiveness of this game in practice, we offer contributions to research, theory and practice along with numerous areas for further research.

LITERATURE REVIEW

Serious Games Design Features: Ethics, Stealth and Attitude Change

Serious games provide a unique pedagogical approach to help students build knowledge while joining in an immersive gamified quest for solutions. They also help address growing concerns in education for contextualised designs that can be used in 'authentic assessment,' which is assessment that requires students to "use the same competencies, or combinations of knowledge, skills, and attitudes, that they need to apply in the criterion situation in professional life" (Gulikers, Bastiaens and Kirschner, 2004, p.69). Serious games achieve experiential learning by allowing learners to perform tasks which are directly related to real-world practices (Herrington, Reeves & Oliver, 2013). That is, serious games can introduce

and prepare students for situations and challenges that they might never face (e.g. military, defence or aerospace maneuvers, healthcare crises or Enron-type corporate collapses), and can be used as part of routine training, before being let loose on expensive equipment, real patients or businesses. In addressing associated issues of engaging large numbers of students in the workplace for work-integrated learning (WIL) experiences, serious games can offer an individualised learning experience for large numbers of learners (Scavarelli & Arya, 2014). Contextualised design features enable individualised learning whereby each player/student can make decisions which result in storyline and gameplay consequences as a result of their unique pathway choices.

Serious games can add value to ethics education by teasing out the single normative rationalist-based reasoning, that might be a typical response in a training context or vignettes or hypothetical research survey scenarios, to embrace more non-rationalist-based responses involving intuition and emotion that intervenes in the drive to decision making. Serious game designs can engage the moments of interaction between the rationalist and non-rationalist approaches, and reveal a more nuanced 'integrated ethical decision making' approach (Schwartz, 2016). This gameplay feature gives the player time for reflexive contemplation (e.g. drawing on both rational and non-rational responses) which is critical in influencing ethical judgement and subsequent intention to act on that judgement. Importantly, serious games can capture the reflexive moments before the actual (un)ethical decision is made, providing far richer experiences than reading vignettes and responding normatively on opinions relating to ethical intentions or perceptions of what one might do in a given situation.

Design choices can also seek to tease out cultural nuances and/or sensitive issues that can be used to further enhance reality. This benefits the player (student or professional) who is rewarded with immediate real time feedback on their actions, providing a safe setting in which to experiment. The serious game can also benefit the academic researcher with the output of the serious game, a rich body of data on the reflexive actions of players.

In somewhat playing to the non-rationalist approaches in ethical decision making, Kaufman and Flanagan's (2015) 'embedded design' approach to serious games design claims that the use of *intermixing*, *obfuscating* and

distancing interventions are key to bringing about attitude and behaviour change. The logic behind these strategies is that often information alone isn't sufficient to bring about positive behavioural change and can often have the opposite effect (Cialdini et al., 2006). They also acknowledge that signalling the intent of an intervention, in targeting unconscious processes can diminish their efficacy (Kaufman and Flanagan, 2015). The three strategies devised by Kaufman and Flanagan (2015, p.3) are:

> (1) Intermixing: balancing "on-message" and "off-message" content to render the former less overt or threatening
>
> (2) Obfuscating: using framing devices or genres that divert expectations or focus away from the game's persuasive intent
>
> (3) Distancing: employing fiction and metaphor to increase the psychological gap between players' identities and beliefs and the game's characters and persuasive content.

The logic behind these strategies is that often information alone isn't sufficient to bring about positive behavioural change and can often have the opposite effect (Cialdini et al., 2006). That is, similar to the normative approaches to ethics training, the signalling associated with the intent of an intervention that targets a player's unconscious processes can actually diminish the efficacy of serious games (Kaufman and Flanagan, 2015). Kaufman, Flanagan and Seidman (2016, p.8) argue that "persuasive games that overtly telegraph their intended purpose of shifting attitudes and mindsets are likely triggering mindsets in players that hinder the game's enjoyability and blunt its potential positive impact." Sicart (2009) warns that the idea or right/wrong in game design needs more consideration and that the implicit or ignored values are really important serious game design features and require further research to correctly embed in practice.

We argue that serious games' design approaches in accounting pedagogy are improved when rationalist moments are integrated with non-rationalist moments in ethical decision-making (Schwartz, 2016). Their effectiveness is achieved by drawing the player to reflect on their gut-intuition-based reasoning, along with using other techniques proposed by Kaufman and Flanagan, (2015). For example, Kaufman, Flanagan and Belman (2015) found a metaphorical, zombie-themed infectious disease serious game

was more effective than one with real-life individuals. Flanagan and Nissenbaum (2014) similarly advise designers to contemplate the intended and unintended design features and the value-based touchpoints in serious games design which require designer attention. Together, this background opens up ideas for different design choices when addressing academic and industry calls for improved accounting ethics training with enhanced immersive experiences.

While the success of the digital pedagogy is directly related to the serious games design features, the issue of ethics in designed gameplay maneuvers and subsequent gameplay consequences is not necessarily explicit or so straight forward (Sicart, 2009). From the designer perspective, ethical issues can be addressed in a simplistic, systematic way. That is, from the player perspective, algorithmic design choices enable players to make winning gameplay moves that minimise or circumvent losses, while at the same time bypassing the need to deal with moral hazards or ethical dilemmas. Sicart (2013, p.33) further explains: "Choices are often presented as either/or, good/bad binaries with relatively predictable outcomes. In this sense, players have enough information to make strategic choices—they are able to minimax the game without necessarily making use of their ethical skills." Schut (2013) also raises the issue of taking an overly systematic approach to games design, with "...the phenomenon of points-based morality....that takes the issues of right and wrong seriously." (Schut 2013 p.37). This common phenomenon places ethical decision-making with the designer while the player recognises the designer's moral choices through the gameplay rules. Take for example, enemy-based shooting games with pop-up citizens to avoid.

While ethics and values can be completely ignored in serious games, some design choices can bring issues to the foreground and play an important role in revealing ethical dilemmas or making players themselves take a moral stance. This can be explicit or implicit in game design.

Ethical Decision Making in Designing Accounting Serious Games

Key to the operationalisation of ethical decision making in serious games designs, is the organisation's ethical infrastructure (Tensbrunsel et al.,

2003; Schwartz, 2016). This is one factor which is seemingly within the control of the game designer. With accounting positioned as a corporate governance mechanism, the rules of disclosure may appear obvious. Nevertheless, there are accounting choices, strategic intent and trade-offs that can be made. With a code of ethics directing rules of right and wrong, there is still room for impactful value-laden decisions, which may result in significant externalities, both positive or negative. Each brings certain values, for example, through ranked importance and choices made to achieve certain outcomes. Prioritisation of value may be placed on profitability and cash flows, with shareholders and other stakeholders part of the valuing and ranking of worth (Annisette et al., 2017). Valuing emerges from the ethics of different individual decision makers, which is not always easy to model in a serious game. Schwartz (2016) identifies the complexities associated with ethical decision making explaining the four steps that take place. These are:

> "(1) becoming aware that there is a moral issue or ethical problem or that the situation has ethical implications (also referred to as 'interpreting the situation,"sensitivity,' or 'recognition');
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> (2) leading to a moral judgment (also referred to as 'moral evaluation,' 'moral reasoning,' or as 'ethical decision making');
>
> (3) establishing a moral intent (also referred to as moral 'motivation,"decision,' or 'determination'); and
>
> (4) then acting on these intentions through one's behavior (also referred to as 'implementation' or 'action')" (Schwartz, 2016, p.758).

The moral judgment stage comprises the key moral reasoning component of the ethical decision-making process, and is based on Kohlberg's (1973) rationalist theory of moral development. However, Schwartz model claims the rationalist approach should be entwined with the non-rationalist view of ethical decision making that posits "intuitive (i.e., gut sense) and emotive processes (i.e., gut feelings) tend to at least initially generate moral judgments" (Schwartz, 2016, p.758).

These factors are useful inputs to serious game design scenarios, so players can discover and respond to unfolding (ethical) situations. In our design approach, we believe some players would follow a more rationalist

approach, while others would respond on gut feelings, resulting in different game play choices. Of course, there are moderating factors, drawn from extant research across the field. These are beyond the game designer's control, but nonetheless impact on the pathway/s the player selects through their immersive journey. These include an individual's moral capacity, moral character disposition and personal context (Hannah et al., 2011; Kohlberg, 1973; Jackson et al., 2013; Albrecht, 2003); their integrity capacity (Petrick and Quinn, 2000), along with the ability to recognise ethical issues, their intensity, perceived importance and complexity (Jones, 1991; Butterfield et al., 2000; Robin et al., 1996; Street et al., 2001; Warren and Smith-Crowe, 2008). These attributes were used in the design of gameplay characters and intended to become part of post gameplay discussion.

These factors identified in the accounting research literature contribute to our accounting ethics education and serious game design. Using hypothesised scenarios provides players with the opportunity to practice in context. When modelling ethical dilemmas in business ethics training and research, Tsahuridu (2003) suggests that care must be taken with underlying assumptions of what students or research respondents might perceive as an ethical problem, or what holds for them in terms of moral values. In addition, Fowler (1995, p.80) explains "people are not good at predicting what they will do in circumstances they have not yet encountered". The same goes for a series of questions that ask students/ respondents to reflect on their own perceptions in terms of yes/no answers, ranking or scales. These questions prompt reflection on the researcher's reality (Marshall & Dewe, 1997). For example, Fritzsche (1995) used dilemmas to examine the relationship between personal values and the ethical decisions of managers, asking respondents what they would do in each situation. Respondents had to indicate on an eleven point scale (0 – definitely would not, 10 – definitely would). This approach is problematic in that it imposes the researcher ideals and does not enable the respondent to freely determine action (Marshall & Dewe, 1997; Randall & Gibson, 1990).

Thus, modelling serious game designs with this in mind requires careful consideration.

THE DEVELOPMENT OF BOGART, A SERIOUS GAME OF ETHICS

Bogart Technologies is a game we created to teach accounting practitioners about the new International Code of Ethics for Professional Accountants (Code). The Code was released by the International Ethics Standards Board for Accountants (IESBA) in April 2018 and became active in Australia as of June 2019. The Code applies to all global IFAC member accounting professional bodies, including the large professional bodies in Australia. The Code of ethics itself is a prescriptive 248-page document which includes a long list of directives. While targeted to accounting practitioners, the Code is representative of business ethics more broadly. The key thesis of the code of ethics is that accountants should accept responsibility to act in the public interest, they should act with integrity (straightforward and honest), objectivity (without bias), confidentiality (including data), competence and due care (discipline expertise) and professional behaviour, to avoid conduct that might discredit the profession. Thus, the target audience for developing the serious game is not limited to professional accountants but can be useful for educating accounting students and all business managers who need to understand the basics of professional/accounting ethics and the implications of breaching the Code. The aim of the Bogart game is not to make players memorise the Code, but to understand the intent of the Code by placing players under the same types of pressures that might be encountered in the real world, therefore creating lasting behavioural change.

In Bogart, the learner plays the role of the newly recruited accountant, invited to consider unfolding corporate governance issues and make decisions with ethical implications, while fulfilling the role in context. The gamified techniques help to navigate through the day-to-day activities of the company, with the potential for each player to determine their own adventure, based on the decisions they make at each stage throughout the game. The game platform, also designed as a pedagogical research tool, provides both designers and researchers with insights of ethical decisions that are being made by the individual players. Embedded within the game are multiple issues which are not unique to accounting but have implications for other professionals, hence useful for business ethics training purposes. The gameplay deals with challenging managers,

whistleblowing and the outcomes of dysfunctional performance evaluation.

In Bogart the learner plays the role of a newly hired senior accountant at a technology firm. Their primary role is to 'process' accounting reports that junior accountants in the firm have produced, however this involves absorbing sometimes conflicting data, along with deciding what the best course of action might be.

INTERMIXING

As identified by Kaufman et al., 2016, intermixing is central to the persuasive efficacy of serious games. In our design strategies we determined it was important to 'mix' the ethical decisions learners had to make in Bogart with other decisions. During the game learners listen to a range of persuasive voices, each taking different ethical perspectives. At the beginning of the game the learner is put through a brief induction course where ethics is mentioned in the briefest possible way. They are told that "*more detailed policies and procedures can be found on your console. You should read them before commencing work*" (Bogart gameplay). The player is then led to the CEO, Fred, an older gentleman who advises them that their performance targets are the most important thing they need to consider.

You will be shown how these performance targets work during your training, and it's important that these are at the forefront of your mind whenever you are making a decision. If you are achieving your performance targets, then you're doing your bit to help the company achieve our overall objectives.

Fred – CEO

This message is reinforced by the CFO, Jade, who explains the performance measures in more detail.

> Fred probably explained we have performance targets here – what I need you to be mindful of are two things. The first is teamwork – we are a close team, and it's our ability to work together which makes us stronger. I am sure you know the whole is greater than the sum of its parts. You would have seen the TEAM principle in your induction training – Together Everyone Achieves More.

> The second performance measure we have is bad debts. It's important we keep them to a minimum as in the technology space we are always needing to invest in research and development to make sure we keep up with the competition.
>
> Jade – CFO

The learner is then shown how to perform their 'job' by the senior accountant they are replacing, who slips in the first unethical decision point as part of business as usual during the training.

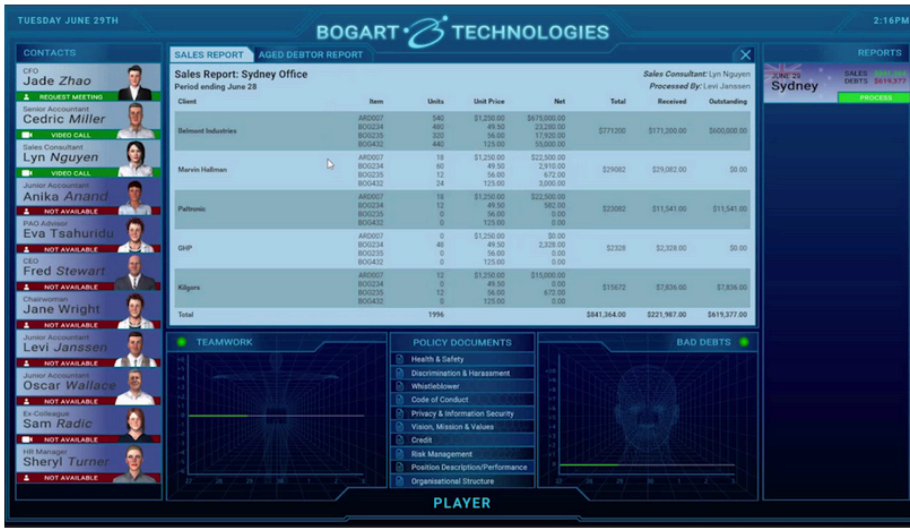
> As you can see the Belmont debt is over 90 days old. Belmont is one of our oldest customers and we do a lot of business with them all over the world, you will see that name pop up quite a bit. Both Fred and Jade have asked that we always give them a bit of leeway – which is good for you as otherwise it would be a bad debt and affect your own performance measures. So, click on 'Grant extension.'
>
> Cedric – Senior Accountant

This process continues throughout the game, with bad information and ethical decisions mixed in amongst routine conversations and business as usual. It is very easy for the learner to fall into the rhythm of 'playing the game' by making decisions they think will result in the best 'score,' which they can (wrongly) consider to be the performance measures on their game computer interface.

OBFUSCATING

One of the main ways that the true purpose of the Bogart game is hidden is through obfuscation of the true objectives. As explained, learners are told repeatedly that all they need to worry about is their performance measures. Even though they go into the game knowing it's about ethics, this is soon forgotten as they start to play the game and try to 'win'.

What they don't know is that these performance measures have been deliberately constructed to lead them away from making ethical decisions, and achieving the highest score will in fact result in them being deregistered and bankrupt at the end of the game.



The virtual computer interface that the learner engages with in the Bogart game, includes a live 'score' of their performance measures, teamwork and bad debts. This reinforces the obfuscating nature of the game with targets that are counterintuitive. The extent to which the student recognises this, determines the outcomes of their gameplay.

In Bogart a conscious effort has been made to make what can seem to be the strategically correct choice ethically incorrect. This mechanic is reinforced not only through the performance measures the learner can see on their virtual computer, but also through the feedback they receive from colleagues, in positions both above and below them. In fact, only one colleague acts ethically throughout the entire game, everybody else is driven by the performance measures and peer pressure from above, and advises the learner to do the same.

The company policy is for debts to be paid in 15 days. It has now been over 60 days. I have noticed that the same company has outstanding debts in several other countries. I have processed the report so you can see it on your console. I just thought you should know.

Anika – Junior Accountant

Our bonuses are tied to our performance metrics, so we need to keep those bad debts to a minimum. It doesn't do anybody any harm; it's just tweaking a few numbers. It's all a bit of a game, and Cedric knows how to play it, that's why he just got promoted. There is no reason to worry about it.

Levi – Junior Accountant

Another design decision that obfuscates the real purpose of the game is that there is very little in the way of a briefing before the game. It is considered good practice to conduct briefings before and debriefings after simulations or serious games but not in a way that will supplant the learning (Leigh and Kinder, 1999), so in this case the briefing is largely performed in game, and is designed to lead the learner astray. Debriefing activities, can be provided in the classroom by the instructor, or in interactive video content (developed as an extension to the serious game), which invites the learners to reflect upon their actions during the game, and connects what the learner experienced in the game to the new ethical standards and framework, using the game as a common reference point.

As Kaufman et al. (2016) suggest, "these findings illustrate the basic premise of the "embedded design" model: persuasive games that overtly telegraph their intended purpose of shifting attitudes and mindsets are likely triggering mindsets in players that hinder the game's enjoyability and blunt its potential positive impact."

By providing this subtle messaging to students throughout the game, it is not until the end that the full dynamics of the game is revealed.

DISTANCING

The process of psychological distancing according to Kaufman et al., (2016) creates a space between the learner and the topic of the game. This separates players from their real-life identities, allowing any reticence or reluctance to be circumvented, increasing the potential for the game to achieve behavioural and attitudinal change.

Distancing in Bogart is achieved through several methods.

The learner is automatically put into the 'first-person' role of an aspiring accountant who is being promoted to a senior position at a fictional technology firm in an undisclosed location. The building and computer systems used are deliberately futuristic, and although the nature of the

work is perhaps plausible for an accounting based game, it's not the type of work that any learners would actually be doing in their professional lives.

So the learners, although all either accounting students or professionals, wouldn't be doing this type of work in their professional lives. However the ethical issues that come up throughout the game are the types of things they need to be aware of in almost any role – including peer pressure from co-workers, poorly designed performance measures, and 'adjusting' numbers so they appear better than they are.

In addition to this, we designed the game believing the learner wouldn't be judged in a way that would create distress. The final scene of the game involves the Chair of Bogart Technologies calling a meeting with the key actors in the game play, including the student as Bogart's Senior Accountant. The CEO and CFO both end up in prison, escorted by prison guards. The worst that could happen to the learner is that they are deregistered from the accounting profession, described as broke and struggling to find another job.

OBSERVATIONS AND REFLECTION

The three 'embedding' strategies presented by Kaufman et al., (2016) provides an interesting and useful way to look at games designed for attitude and behaviour change.

Overall, our initial pilot testing and early use of the game suggests that these strategies worked. Our observations suggest the majority of players do the 'wrong' thing in the game – that is, make unethical decisions, resulting in them losing their role as Senior Accountant at Bogart. This came as a shock, all done in an overly dramatic fashion. In our experience, this is accompanied by the learner laughing and putting their head in their hands, or calling out that they have been sacked! Another, who did all the 'right' things, had his hands across his face at the end, believing he would be sacked by the Bogart CEO. As Day 3 in the game unfolded, he was delighted to see his efforts paid off, and he was promoted to CFO. We were pleased to see the early stage success of this immersive experience. Given these early observations, we propose formal experimentation conducted on the effectiveness of Bogart, a serious game of ethics. We believe this could touch on a number of points.

First, from an intermixing perspective, we turned up this strategy by building an intensity to the messaging. We used the computer agents and non-player characters (NPCs) to increasingly exert pressure on the behaviour of the player. In Bogart, this was done by using the virtual employees to establish a 'business as usual' that wasn't ethical, as may be the case in a real world situation a professional might encounter. We believe this had a strong effect on the effectiveness of Bogart. However, several players reported that even though they knew the story line and what was going to happen, they still experienced anxiety when the CFO became increasingly angry with them. This only happened when the player attempted to do the 'right' thing. Whether this insight can be used to help build resilience in players, and train them to deal with the discomforts of unethical work situations, or, whether we need to downplay this anger in the game, is an area for further research. This is of particular concern, given wellbeing in the workplace is topical for both employers and employees alike. This game attribute could be used to the advantage of educators,

before sending students to the workplace. Furthermore, there is a plethora of research supporting both the positive and negative effects that peer pressure can have, particularly on students (Bursztyn et al., 2016), which can be harnessed to produce behavioural change in a game setting by using NPCs. Xu and Lombard (2017, p.159) found that "users' actual behavior would not change unless they perceive these computer agents to be intelligent and appear to have human characteristics," which in the case of Bogart was relatively limited, as the learner only had a limited range of choices (for example to process or reject a report) and the NPCs would respond in accordance with these choices. In future with technologies such as AI, NPCs may be able to play a greater role in promoting positive or negative behaviours and attitudes to those playing the game. However, this needs to be managed with trained educators to ensure wellbeing issues are appropriately addressed during gameplay.

Second, from an obfuscating perspective, the computer agent used in Bogart was the performance measures or 'scores,' which combined with peer pressure by NPCs was presented to the learner as the most important aspect of the game. Game scores can be seen by players as a measure of whether a particular in-game action is good or bad. Did the players who lost the game succumb to the computer agent (rewards for bad behaviour) or the pressure from the NCPs, resulting in preferences not to go against the boss. and just blindly follow instructions? Research on the choices players make at different parts of the game would be useful to determine the effectiveness of the different types of intermixing messaging. This ties back to the attributes of the player, and their own moral capacity, moral character disposition, personal contexts, integrity capacity and the ability to recognise ethical issues, their intensity, perceived importance and complexity (Schwartz, 2016). Understanding the game play outcomes in terms of the moral/ethical attributes of players would be an interesting area to further explore.

Third, from a distancing perspective, research could determine the extent to which this played a role in the level of immersion in the game. The level of distancing in Bogart was not as extreme as one serious game example mentioned by Kaufman et al., (2015) where a metaphorical, zombie-themed infectious disease game was more effective than one with real

life individuals. Our storyline development was supported by an expert in forensic accounting. We wanted a story that was more likely to happen in the workplace, subtle enough that the players would not instantly recognise the unethical behaviour. Perhaps there is room for Bogart to be further distanced from reality, although this may have commercial implications, both in terms of getting funding and selling the game to a professional audience. Nevertheless it could be argued that the game does not require specific accounting expertise. Use with non-accounting game players may reveal a heightened sense of distancing, with players from the outset knowing they would never be working in this type of role.It would be interesting to explore how experiences of non-accounting players differ from accounting students who might not notice the distancing effects, as much as others. Another area would be to explore the game with users who have experienced similar difficult situations in the workplace, and whether the level of distancing is perceived to be as strong. Exploring the combination of the three embedded strategies in different cohorts would provide serious game designers with interesting evidence.

Building serious games to teach ethics education is not without challenges. Scenarios need to be realistic enough for pedagogical benefit, but subtle enough to immerse the learner into a situation where they are not an outsider making judgement from a distance, but caught up in the unfolding moral and ethical dilemma, contributing to the situation at hand as an agent. Using stealth game interventions is somewhat at odds with the lessons being learned in the serious game as it involves a degree of deception, but it is this deception which creates an engaging and unpredictable experience for the learner.

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