Why do simulation games work? In search of the active substance

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This article reflects on the question why simulation games are such an effective tool for learning. It is based on the authors' experience and that of many other practitioners in the field. The article posits that it is the confluence of systemic knowledge, practice, emotional involvement and social embeddedness that creates the potential to achieve results that no other methods can match. A simulation game run constitutes a bout of individual and collective purposeful action by a individuals or a group formed specifically for that purpose. People have evolved to be supremely good at just that. Simulation games can teach systemic knowledge, and they can enable participants to try out organizational changes. But this potential is not always realized. Game runs are 'alive' and variable, and this is a risky strength. They activate not only the explicit rules but also the hidden cultural rules of the participants. This can lead to memorable learning as well as to frustration, particularly when games are used across cultures. The article specifies reasons why games could fail and ways to avoid these pitfalls. It shows that craftsmanship is needed in game design, facilitation, and evaluation.

KEYWORDS: simulation games, learning, practitioners, magic circle, Homo ludens, culture, systemic knowledge

1. Introduction

"It works; that's all we have". These words by Dick Duke, one of the founding fathers of simulation gaming, summarize the state of knowledge that has long been characteristic of the simulation gaming world. Wolfe & Crookall (Wolfe & Crookall, 1998) suggested that the field's eclectic foundation has been a virtue for its development but a vice regarding its rigorous assessment. Crookall (1995) also asserted that simulation/gamers are "interdisciplinarists" by nature. They are building simulation games ("games" for short) and solving practical problems through these games regardless of discipline. They are not so interested in justifying their work. Simulation gaming is a discipline that cannot afford to isolate itself in the ivory tower, because practice is central to it. This puts simulation gaming in one bucket with a host of training tools for practical, integrated skills. Practice makes perfect, whether for cooks, football players, or car drivers.

Proving that simulation games work reminds us of high school math in which one had to build a complicated argument to prove that two triangles had the same shape when one glance at the figure was enough to confirm they did. The effectiveness of simulation games is evident to those who work with them (players and facilitators). But there are still many people who do not take games seriously, probably because their association with childhood or with the frivolous (Sutton-Smith, 1997). The introduction of computers and the Web, and the adoption of the term 'serious games' have certainly created a bandwagon effect. But that effect may wear out. The field is still left with the assignment to convince sceptics, with force of arguments that simulation games work. More precisely the questions are: why do games work and for what kinds of situations, and what should be the roles of designers, facilitators and players? An analogy can be made with an aspirin: taking an aspirin could help because of the acetylsalicylic acid in it, or by a placebo effect, or through the love with which it is

administered, or because of the glass of water one takes with it…or perhaps the effect could depend on who takes it and for which ailment. Likewise, a simulation game could work through some property of games, or through the quality of the simulation model, or through the composition of the group that performs it, or through the expertise of the facilitator, or through something else yet again, or through a combination of all of these.

2. The aim of the article

This article's authors took a step forward by approaching a selection of simulation gaming practitioners from all around the world and asking each of them to put down in a brief essay what, in their experience, constitutes the essential element of simulation gaming that makes it work as a tool for learning. The authors collected these contributions, discussed them with the contributors and other participants at an ISAGA conference, and combined them in a book (de Caluwé, Hofstede, & Peters, 2008)[1]. The contributions of the practitioners in the book present personal viewpoints and do not give the same message. This is just what was expected, because games are not used in the same way by everybody. The range of techniques and application areas is vast. Yet there is a common trend through these contributions. The present article tries to formulate the big picture that is implicit in it. The article takes a synthetic rather than an objective perspective. The authors' hope is that it will help simulation gamers to justify their work, and other readers to gain understanding about the impact of simulation games. Within the limits of space constraints, some of the lessons drawn by the practitioners who contributed to the book will be used in the article. References to the book's chapters will be avoided most of the time, to avoid cluttering the text. Relevant literature from other sources is also used, though this article is not primarily a review but rather a synthesis with the signature of its authors. These Dutch authors represent a Dutch perspective but at the same time an international outlook. This matters, because culture is necessarily part of simulation gaming, as will be elaborated on below.

Note that the article does not attempt a rigorous definition of simulation games. The term "simulation games" in this paper could refer to, among others, computer games, card games, role-playing games, game design exercises, day-in-a-life simulations, or other collaborative simulation. Though each of these forms obviously has its proponents, strengths and limitations, it is the common ground that is aimed for. The authors admit to have a bias towards social games, that is, games in which several players participate at the same time. This is because the potential benefits of simulation gaming are most obvious in social situations. Most of the contents of this article are valid for group as well as individual learning though. A well-researched recent position paper on instructional computer games for individual learners is the one by Rosemary Garris et al. (Garris, Ahlers, & Driskell, 2002).

The article is structured in the following way. We start with observations from the field, remarks about the learning potential of simulation games and the basic questions for designer and participant of games (section 3). Then we will present four strengths of simulation games (section 4). Section 5 describes why games can fail. We will draw conclusions in section 6.

3.1 Observations from the field

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[1] AUTHORS' NOTE: The authors are indebted to the gaming professionals who contributed to the book. They are François Breuer, Douwe E. Buis, Hergen Datema, Richard D. Duke, Jac Geurts, Jan Hense, Dmitri Kavtaradze, Maaike van Kessel, Willy Christian Kriz, Pierre de Laat, Bram Lankreier, Henny Leemkuil, Dennis Martens, Igor S. Mayer, Eric Molleman, Rob Rapmund, Jens O. Riis, P. Robert-Jan Simons, Jannes Slomp, Swentibold Stoop, Shigehisa Tsuchiya, Ivo Wenzler, Marleen van de Westelaken and Durk-Jouke van der Zee.

As a first step in getting to grips with the essence of simulation gaming, the authors put together a list of observations about it that they have made as designers and facilitators. They discussed these amongst other practitioners. Figure 1 summarizes these observations. It is interesting to note that the observations mainly fall within the emotion and social aspects fields. These have been most salient to the practitioners, because based on experience they turn out to be constant factors.

The figure does not pretend to be exhaustive. The usual issues such as the game's quality in terms of the system model, or the quality of the facilities, have not made it to our list. Of course, these should be included. This time, however, we want to focus on these emotional and social aspects of games, because practitioners find them so important.

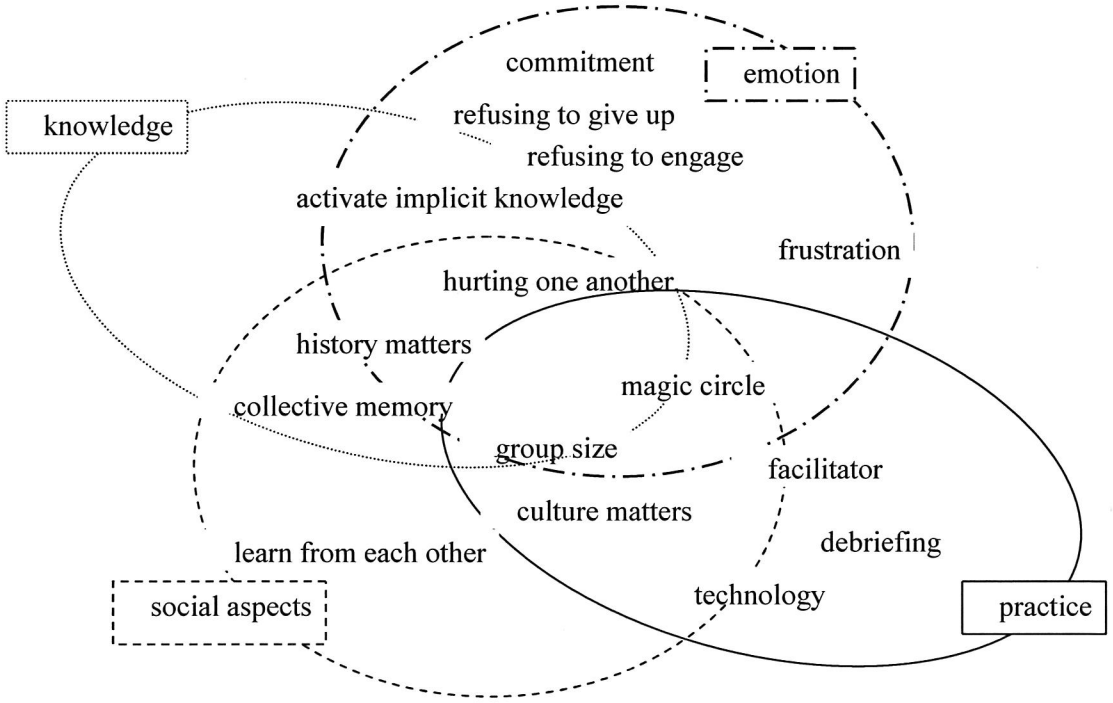

Figure 1: visual impression of observations about simulation gaming. The ovals indicate spheres of attention. The remarks are placed in a position that represents the sphere of attention to which they belong.

3.2 Learning through a game

An important implication of Figure 1 is that it shows that while successful learning pertains to knowledge and practice, (pre-) conditions of learning concentrate in the social and emotional aspects. What is most salient during a game session is not necessarily linked to the game's stated objectives. In other words, a game could be designed for learning about topic X but depending on many factors such as the design quality, the particular session, co-participants, and facilitator, a participant could learn many other things beside X, or other things but not X, or nothing at all. This may be one of the reasons why people are reluctant to invest in simulation games: there is a degree of unpredictability, and there is a risk. 'No pain, no gain' is a dictum that one can hear from gamers, and there is truth in it. Implicit learning, unconscious learning, social, emotional and cognitive aspects are all part of learning processes in general (Ruijters, 2006, Simons, 2008) and part of learning by games.

So what aims could be pursued through simulation gaming? A well-known typology of aims is to distinguish awareness, knowledge, skills and motivation. Games can be used for all of these. Typically, awareness of the importance of an issue motivates people to seek knowledge about it and to discover that they lack some necessary skills. Gaming is a powerful motivator particularly for issues

that are unconscious before the game. Engaging in a simulation game can make people conscious of the importance of issues and of their lack of knowledge of skills. And they can create a strong sense of individual or shared purpose.

A simulation game consists not only of play. Participants could be involved in designing the game, some could be involved as observers, and all should be involved in a thorough debriefing session in which the link is made between the gaming sessions and the lessons to learn. So learning is not exclusive in the role of the participant. Learning pertains to observers, designers and facilitators as well.

3.3 The basic questions for the designer, the participant and the facilitator.

(Gert Jan en Vincent: hier de paragraaf plaatsen die stond onder het kopje: What, how and why questions for designer and participant)

4. Four strenghts of simulation games

In this section we will describe the four strengths of simulation games. They concentrate on the integration of cognition, emotion and action (4.1), the strong reproduction of social life (4.2), the multiplicity of rules (4.3) and learning about organizational life and change.

4.1 Simulation games integrate cognition, emotion and action.

One obvious aspect of simulation games that sets them apart from most contemporary academic disciplines is that they require synthesis. In a time of rapidly increasing specialization in the sciences this makes simulation gaming an outlier. A gamer is more like a general practitioner than a medical specialist.

Looking back on a life spent in leading roles in public and business administration, and trying to make sense of his experiences, British author sir Geoffrey Vickers (Vickers, 1965) made a useful distinction into three kinds of judgement that people need to make: judgements of facts, judgements about what is desirable, and judgements about what to do. The three kinds of judgements relate to the domains of 1) cognition, 2) ethics, emotions and culture, and 3) action and change. The integration of the three is always needed in life, particularly by leaders of any kind. One must gauge the situation using relevant knowledge, judge its desirability and acceptability to all stakeholders, and then decide on a course of action. This integration is catered for by practitioners of simulation gaming. Simulation games are therefore well-suited as tools to acquire cognitive skills that in real life have to be performed under stress and with great risk, and as tools to integrate cognition, emotion and action in social settings. For this latter reason, they are especially useful to help acquire organizational and leadership skills. We will elaborate this further in section 4.4.

Not only the participants but also the other parties involved in simulation gaming have to think synthetically:

- Simulation games call for integration of faculties on the part of the **designers**. Holistic thinking about a problem area, integration of all the relevant disciplines into a model, incorporation of playability concerns are all required. So a designer (or a group of designers) is obliged to think in an interdisciplinary way. Then, that designer has to build a game, making choices.
- Simulation games call for integration of faculties on the part of the **players**. In games intellect, motor skills, control of emotions, and social skills are all activated in an integrated, purpose-driven way. After the experience, participants are explicitly asked to make sense of the simulation game, their role, and the relevance of all of this for real life. So it is a two-step event as far as the participants are concerned.
- Simulation games call for integration of faculties on the part of the **facilitators**. They need to carefully balance between the role of instructor, motivator, content expert, authority, and fly-on-the-wall. They need to subtly guide, help, seduce, confront or constrain participants. Their finest

hour, professionally speaking, is at evaluation or debriefing time when they can make the difference between "just" an experience and a link between this particular experience and the game's purpose in terms of learning.

(Onderstaande tekst naar 3.3)

Basic questions for the designer , the participant and the facilitator

There are three basic questions that concern the designer, participant and the facilitator. It is the what-question, the how-question and the why-question. We present these questions in Figure 2. We integrate Figure 1 in this Figure, by integrating the spheres of attention of Figure 1.

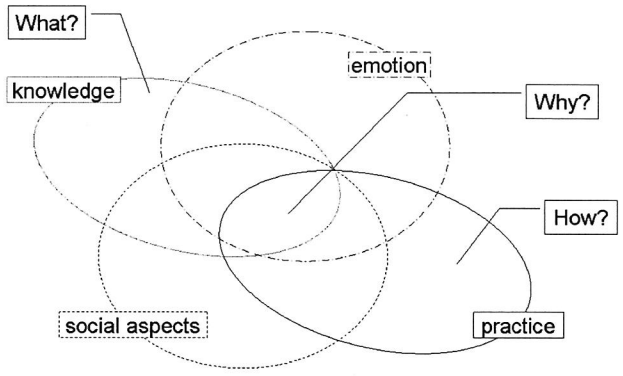

Figure 2: Four spheres of attention and the what, why and how of simulation games.

Chronologically, a designer will most probably start with the cognitive aspect. This is the *what*, i.e. the sphere of knowledge about which a simulation game is to teach its participants. The next step is the action, or *how*, i.e. designing a simulation game that will include the main issues to learn about. But as to the *why*, that will be different for the designer than it is for the participants. To the participants, the two spheres: emotion and social aspects tend to be paramount: is participation emotionally rewarding or risky? And what are the social incentives of engaging in the game together with the other participants? And finally the facilitator (who guides the game) will have to balance all four fields of attention, starting with emotional aspects and ending with the system knowledge that the game intends to convey. If participants have also been involved in designing the game they may relate to it in a different way because they also have stake in the 'what' and 'how'. Indeed it has been shown that designing a game can be very instructive in its own right. Druckman and Ebner, working with Australian and Israeli students, found that design of a negotiation scenario was a more effective learning tool than role-playing it (Druckman & Ebner, 2008).

4.2 Simulation games reproduce social life

The lives of people consist of many activities. Part of this is organized, collective purposeful action, especially when we look at organizations. Every time that we gather around a ball to have a match, or around a table to start a project, or around an enemy to have a fight, we engage in purposeful action in a group that assembles for that purpose. This is no coincidence. It has deep roots in our history.

Group-level selection

Our ancestors have lived through millions of years of cultural selection during which groups of humans that were less skilled for collective purposeful action have lost out against those that were better at it. Military process and technology were important, and so was social cohesion. People owe their social nature to a long evolution of group-level selection which has made organized groups similar to super-organisms(Wilson, 2007). Human groups – up to the level of society - can achieve things that no single individuals could do. But groups are even less suited to learning from a book than are individuals. This makes simulation games particularly important for a means of making groups learn.

Our evolution has thus shifted from being primarily genetic, as with our relatives in the mammalian world, to being primarily cultural. All humans in the world are genetically more alike than all chimpanzees (Richerson & Boyd, 2005). But human cultural variation is staggering (Hofstede & Hofstede, 2005). Culture is described by Hofstede and Hofstede as the unwritten rules of the social game in a society. A society is meant as a group in which people live from birth. It is often a nation but it could also be the case that regional, ethnic or religious groups are the primary social environment. The point about culture is that it is unconscious. *Homo sapiens*, 'knowing man', has trouble understanding culture. *Homo culturalis* is unconsciously competent in his / her own culture.

Conscious or not, people are continually finding out and creating the unwritten rules of interaction in the groups in which they find themselves. This has two implications that are very important. The first is that any two people, when they first meet, might have misunderstandings due to different cultural rules, for instance about proper greeting ritual. The second is that a group of people who have never met before, if they find themselves forced together for any length of time, will soon start to create implicit rules of behaviour. It is in our nature to create culture when we are in a social situation. Both cross-cultural misunderstandings and creating shared implicit rules are usually unconscious processes.

Rituals

Social life proceeds in coherent units that are often called rituals. We have rituals for greeting, eating, buying, negotiating, saying goodbye... We also have smaller rituals for interpersonal cues: making eye contact, holding gaze, keeping a certain distance, not answering a question, being relaxed, being markedly polite... In short: our days are filled with actions that have a symbolic meaning beyond what is apparent. And these rituals and symbolic meanings differ across groups and societies.

There are also rituals that mimic other rituals. People re-create their social world by simulating it. This is visible in any theatre performance. It is also literally visible in the use of new communication technologies or 'social software'. Facebook, Hyves, LinkedIn and Plaxo, for instance, are machineries to create communities and norms and to enforce them. They are institution-creating and -supporting technologies. The social complexity that users create is impressive and constitutes a case of rapid cultural evolution.

It is a small step to consider simulation games as special cases of the rituals that constitute our daily lives. Huizinga made a very deep point when he termed our species Homo ludens: 'playing man' (Huizinga, 1938). When we attend a party, or a church service, or a meeting, Huizinga would say that we are creating and playing simulation games. The difference with the simulation games this article describes is that most of us take real-world rituals more seriously than they do simulation games. But it is only a gradual difference. Some people actually take the 'magic circle' of simulation games with deadly seriousness. This is because simulation games build on a very solid foundation. They reproduce the essence of what it means to be human: gather around a task in a group formed for that purpose, and try to do well.

4.3 Simulation games have a multiplicity of rules

Simulation games are environments with a clear infrastructure of rules, roles and incentives to start with. But they leave leeway for letting a unique process unfold during a game run. The rules are not fully specified. The more free interpersonal interaction a simulation game allows, the more leeway there is for unwritten rules to operate. In this way simulation games are very similar to the institutions with which our societies are filled and that all of us populate daily. For instance, a church service has common formal elements across a wide range of religions such as taking a place, listening to a priest, praying, being silent, and singing. Other elements are not formally specified. What fraction of total time is spent on each of these activities, how the congregation members are dressed, how people are spread across the room, what style they sing, whether they talk or whisper among each other during the service,– these are very different, so that the 'look and feel' of church services differs greatly across religious groups.

This 'look and feel' depends on unwritten, cultural rules. Such rules cause two runs of the same simulation game to be different in predictable ways if the participants are from different cultures. A very convincing demonstration of how a simple simulation game reproduces the unwritten social rules of the participants in a game run is presented in Henrich et al. (Henrich et al., 2005). In an impressive concerted research effort, these authors played the ultimatum game with ordinary people in 15 small-scale societies in various continents. The ultimatum game is extremely simple. There is one round for two people: the 'offerer' provisionally receives a dividable resource, usually money, and can offer a fraction of it to the other, and the 'responder' can accept or refuse. If the responder accepts, both can keep what they have. If the responder refuses, neither participant gets anything. The usual economic logic is that offering too little is selfish and might induce the responder to refuse. In student populations, modal offers are always 50% and mean offers between 40 and 45 %. Henrich et al. and found unambiguous evidence that the participants from their 15 cultures did not enact *Homo economicus* but *Homo culturalis*. In other words, the participants tried to behave decently according to the rules for repartition of goods that held in their society. For instance, among the Au, living in the New Guinea highlands, offerers offered up to 70% of the prize to their opponent, but these offers were usually refused. Accepting such a big present would have created too much of an obligation. Not offering it, however, would have indicated stinginess on the part of the offerer. On the other hand, the Quichua in tropical Peru usually offered only 25%, and almost all of these offers were accepted. This is a horticultural society with hardly any trade tradition. The Lamalera from Indonesia, collaborative fishermen, almost always offered 50% or more.

Mutatis mutandis the same is true for all societies, also modern industrial nations: we enact *Homo culturalis* in simulation games, of which *Homo economicus* is no more than a special case. If it is true for simple games, it is true for more complex simulations, e.g. "a-day-in-a-life" simulations of organizational changes.

4.4 Games are ideal for learning about organizational life and change

Organizations exist in a world of the feasible. All new ideas are tested against practice. A good idea that does not fit the wider system in which it is implemented will fail. In other words, there is a strong selection against bad innovations. This makes it risky to innovate. But not innovating while others do is also dangerous. Therefore there is a strong case for trying out innovations through pilot projects or, at an even earlier stage, through simulation games. This allows to learn from practice without incurring real-world risk.

What is it that makes organizations successful? Besides knowledge and good judgment, a shared sense of purpose and optimism are important to their success. On the contrary, fights for leadership, for instance, can do a lot of harm. This is another argument in favour of simulation games. They test not only the knowledge and intellectual skills of participants but also their capacity for collaborative action.

Simulation games couple thinking and doing. Participants are constantly thinking, acting and considering. They are confronted with actions that they do not want to take or with consequences the do not want to accept. Or vice versa: they want to want to achieve something and develop or learn the purposeful acts that are required for this. The process of sense making is the key of learning in a game: through the process of visualization and verbalization, people learn about their actions, thoughts, goals and results. And they learn how to change these if necessary. They do this during a game and consolidate it during debriefing. The process of concrete experiences, (self-) observation and reflection, formation of new thoughts or concepts and new actions is constantly in action.

A group that plays a game can be seen as a micro-organization where all aspects of the organizational life develop: strategy, structure, culture, roles, communication, leadership and conflict. Simulation games are structured exercises for trying out here and now the future of cooperation and organizational life.

5. Why simulation games can fail

Figure 1 can also throw light on the reverse question of how to prevent simulation games from failing. Factors that have to do with emotions and the social process are important both for success and for failing of game sessions. Failing is not a straightforward notion, by the way, because many people are involved and a failure from one perspective need not be a failure from another person's point of view. The obvious example is that performing poorly during a game can be a very powerful source for learning, or a very powerful reason for frustration, depending on how the experience is handled. We will describe seven sources of failure: emotions (5.1); design (5.2); rules (5.3); cross-cultural issues (5.4); facilitation (5.5); evaluation (5.6) and the homo ludens-pitfall (5.7).

5.1 Emotions

Emotions can be strong motivators for learning. But they can also be strong inhibitors. Participants who are afraid will become defensive and refuse to engage. They may pick up a very different message than the one intended. One of the important tasks of facilitators is to monitor anxieties among participants and to do something about them. So creating a safe learning environment is extremely important.

Emotions can also become problematic during social interaction. The "magic circle" can become a Roman arena. The motivational state of wanting to win the game can change placid people in fierce warriors or jealous monsters. Misunderstandings or sheer competition can turn vicious. Often facilitators can usually let a game start with the faintest of signals but need to whistle loud and long to signal the end of the game, and also need to start the evaluation by settling the win / lose elements in the game setting.

Another aspect related to emotions is the set of expectations with which participants start a game session. Are they prepared for what they have to do, and for the kinds of experiences they may have in the game? Are they free from competing claims on their span of attention? If these conditions are not met then the game session could fail due to lack of engagement. Is the game unsafe because it has real-world consequences, e.g. because it is used for performance appraisal or examination? If so, it may fail because participants are anxious.

5.2 Design

Designing a game is a difficult craft. One needs to simplify a real-world situation into a model, but not oversimplify. The essential elements of the real-life situation of concern should be operational in the game.

If one gets the model right, but the game is not enjoyable as a game, because of lack of incentives, a wrong level of complexity or other reasons, then the game will fail to motivate its participants, and participants may fail to learn just because of lack of involvement.

If one gets the model wrong but the game is enjoyable, then the participant may walk away happy but with an erroneous idea about the system of concern, which means that the designers will have failed, even if perhaps nobody notices. Facilitators must check whether the participants actually learned what the game set out to teach. Before this, at the time the game is being designed, the cycle from design to evaluation has to be explicitly closed by game designers. Design should be linked to evaluation.

5.3 Written and unwritten rules

The design of the game becomes explicit in its model that shows in rules, roles and incentives. But, as pointed out earlier, both the designers and the participants take many other rules with them. These are cultural rules about what constitutes appropriate behaviour in certain settings. The design of a game always carries the unconscious assumptions that are part of the culture of its creators. Likewise, to the participants a game run is always an interplay of written and unwritten rules.

This means that the same game, played with participants from different cultures, can yield very different outcomes. This can be baffling to a facilitator very experienced in one part of the world but not in another. It happened to Elizabeth Murff from Eastern Washington University (Murff, 2008),

experienced in playing the evergreen game SO LONG SUCKER with local kids, when she did the game with Taiwanese students. Basically the game aims to teach 'survival of the most opportunistic political manoeuverer' in an incentive system where alliances are possible and bad performers get ejected, and this is repeated round after round. While games typically lasted a few minutes with US participants, the Taiwanese managed to play for hours without kicking anybody out. The same written rules, but different unwritten ones, yielded an altogether different experience. The incentive structure of the game obviously was not meant for Taiwanese society with its focus on maintaining harmony and never letting anybody drop from the boat.

These cross-cultural differences are predictable to somebody who knows about the culture of the participants. Meijer found them in playing a trade game about trust and cheating, the TRUST & TRACING GAME (Meijer, Hofstede, Beers, & Omta, 2006; Meijer, Hofstede, Omta, & Beers, 2008). While Dutch buyers in the game were reluctant to trace deliveries, Americans did it massively even though costs were attached, because they believed that without that their buyers would not believe their quality claims. The Dutch live in a society where trustworthiness is taken for granted much more than in the USA.

Elizabeth Murff's article describing her experiences was refused by a journal on the grounds that SO LONG SUCKER is an old and well-known game and we know all about it. But cultural differences can cause the same game to have very different learning results in different cultural environments. A game could "fail" in the eyes of the facilitator just because the participants, taking their cultural background with them into the game, create a new kind of incentive system. This is an area that merits serious attention from the simulation gaming community.

5.4 Cross-cultural issues in simulation gaming

One way to deal with culture and cultural differences in simulation gaming is to bring it into the cognitive domain by discussing it explicitly. This has the advantage of being relatively safe, because participants limit themselves to talking and listening, and of enabling to address issues that are so painful that one would not wish to enact them. This approach to cross-cultural issues is taken by Damron and Halleck. They designed a "culture assimilator" for non-US students to cope with US university life (Damron & Halleck, 2007).

Another way is to actually enact cross-cultural encounters. This approach also brings in the emotion and action domains. The content of the action can be adapted to the situation. A 'safe' game of this type that can be used by university students, for instance, is MARRIAGE AND FAMILY in which participants form hypothetical families between which marriages are then staged. At debrief time, less safe contexts or incidents could then be discussed.

Which of the two approaches is more appropriate depends on the experience and preferences of the facilitator as well as on the participants.

A third way is to consciously create cultures. This is done in the famous game of BáFáBáFá and in numerous other games, e.g. games with synthetic culture scripts (Hofstede & Pedersen, 1999). These culture-related possibilities and pitfalls in gaming, including relations between participants' culture and their 'zone of comfort' in simulation games, are discussed at length in work by Gert Jan Hofstede (Hofstede, 2008; Hofstede, Pedersen, & Hofstede, 2002).

5.5. Facilitation

A well-designed game can be killed by inadequate facilitation. And good facilitation can make the most of modest games. And this is not just a question of making sure facilitators are qualified. The same facilitator can work wonders in one group but do a poor job in another. Facilitating simulation games is a complicated, multifaceted skill and very hard to teach in another way than by experience. Facilitators can vary their behaviour along different lines. For instance they could actively interfere in the game content, or in the process, or they could abstain from either or both (Kessel & Datema, 2008). A more directive style could make participants feel safer, or belittled, depending on game complexity and background culture for instance. A fit has to be established between facilitation and

participants. Here again, cross-cultural misunderstandings can occur in international settings. While everybody is of course a unique person with unique personality, it is true that game participants have typical needs and behavioural tendencies depending on their cultural background. Facilitators should cater for this (Hofstede et al., 2002).

Facilitators are children of their culture just as participants are. In different cultures, different motivators predominate. A few examples can indicate what this may mean. Egalitarian cultures will stress active and collaborative learning, as e.g. US gamer Duke (Duke, 2008). If they are also feminine and uncertainty tolerant, then fun and playfulness are important motivators, as e.g. Danish production management gamer Riis (Riis, 2008). In Japan, with its very uncertainty avoiding, collectivistic and long-term oriented culture, safety and social acceptability are important concerns. In accordance with this, Japanese gamer Tsuchiya (Tsuchiya, 2008) mentions confidence and trust as essential preconditions for success of a game. The degree of freedom needed to make Danish participants feel challenged is likely to be threatening to Japanese participants. Misunderstandings and confusion can and do occur if participants and facilitators are not from the same culture. The example of Murff's SO LONG SUCKER (Murff, 2008) illustrates this. Her first thought upon getting unpredicted game results with Taiwanese participants was that she had failed as a facilitator; it was only later that she took it as an opportunity for learning herself about how cultural, unwritten rules can play up.

5.6 Evaluation (debriefing)

While generally the proof of the pudding is in the eating, when it comes to games the proof is in the evaluation. How to evaluate is a matter of taste and also of cultural background of the facilitator. For instance, a culturally masculine society is more likely to believe in hard proof and validity tests for the kind of social experiences that games constitute, while a feminine society is more likely to be satisfied with face validity and enthusiasm. But anyway, evaluation of some kind is needed to allow the participant to make sense of the experience.

Yet debriefing is usually the first item from which organizers take away time if it is in scarce supply. And this is bad practice, as any gaming practitioner can affirm. A good, non-hurried evaluation can add enormous benefit to a gaming session, provided that session was a good one with committed participants. If the game run was lukewarm or disagreeable then debriefing can be awkward. If debriefing is organized in an active way with contributions from participants then its duration is hard to plan. It takes self-confidence for a facilitator to plan a long debriefing session in advance.

George Harrison sang "If you don't know where you're going, any road will take you there". Hense & Kriz argue the importance of taking one theory as the basis for a simulation game's life cycle. They advocate starting a game design process based on theory and of evaluating sessions based on that same theory (Hense & Kriz, 2008).

5.7 Homo ludens pitfall

This article has now sketched some things that may go wrong, and some tips for success. Failures are exceptions, however. The single most impressive fact about simulation games is that it is so easy to make them memorable and successful. A pretty unsophisticated game, delivered by a not-too-experienced facilitator, is met in most instances with enthusiasm. Within the bounds of acceptability set by *Homo culturalis*, people are *Homo ludens*, after all. Most of us only need a slim pretence to engage in a game. But this is also a danger. Because we may just be using the game as part of our life at large, as an arena for enjoyable social interaction, and never give a thought to the knowledge that the game session was supposed to impart. In a well-designed game we might still get an implicit message. But the biggest pitfall of gaming is that out of sheer enjoyment of the game we disregard or underestimate the reflection.

Once more, there is a parallel with culture. We are a species formed by cultural evolution. But that same pressure has not made us eager to reflect about culture; on the contrary, such reflection is taboo-ridden. In consequence, the more a game activates our social behaviours in the fullest sense, the more it becomes difficult to consciously debrief it and to reflect on it The capacity of reflection about one's

own hidden rules that is needed for such a debrief is just not given to all participants or even to all facilitators. Due attention to the transition between action and reflection is mentioned by many practitioners as one of the active substances of gaming. Kavtaradze (Kavtaradze, 2008) and de Caluwé (de Caluwé, 2008) regard it as a central concern for learning and changing.

6. Conclusions

Just like an aspirin, a simulation game may not work for quite the same reason for everyone. The contributions in the book that inspired this article (de Caluwé et al., 2008) show that a wide variety in aspects is stressed by the twenty-odd practitioners who participated. Gaming simulation is multifaceted. But if forced to summarize the essence the authors could say that *the conjunction in one single purposeful collaborative effort of new knowledge, application in action, a social setting and emotional involvement* is the central active substance.

This means that a good simulation game effort requires careful attention to all four spheres of figure 1 (knowledge, social aspects, emotion and practice) in all its phases.

During **design**, the knowledge to be gained must be explicitly considered, gathered and modelled. A game has to be crafted that captures the essence, and pays attention to the roles and incentives of participants.

During **play**, socio-emotional aspects have to be handled by the facilitator so that they can contribute to the evaluation instead of disrupting the game.

During **evaluation**, all four spheres have to be touched upon in a process that starts with coming to terms with emotions, and ends with reflection on the message that the game carries for the participants' professional or personal life as individuals or as a group.

During all phases, gaming professionals should bear in mind that in order to achieve the kind of learning that the designers intended, the exercise must be acceptable and understandable not only at the level of written rules but also at the level of unwritten rules. To improve *Homo sapiens*, gamers find an ally in *Homo ludens* as long as *Homo culturalis* is not offended or misunderstood.

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