Taking a Stand through Digital Games

An empirical procedure among consciousness, learning and participation

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Abstract

The article focuses on an empirical procedure aimed to harness digital games in exploring sensible issues in social research. By merging qualitative and creative methods and taking into account suggestions from Sociology, Media Studies, and Game Studies, the suggested approach combines single interviews, focus groups and participative design exercises according to a creative learning path. In order to put its effectiveness to the test, four groups of players (N: 20) with different attitudes toward play were recruited for addressing the theme of *sustainability*. The digital games *Crusader Kings 2* and *Sid Meier's Alpha Centauri* were selected as facilitating tools due to the related pertinence. Results show an increment of consciousness and awareness about the topic and a noteworthy potential in engaging subjects and stimulating their feedback in empirical investigations. In turn, some limits emerged to the extent that further interventions are required to stress and relativize the proposal.

Keywords: creative methods; Crusader Kings 2; qualitative methodology; Sid Meier's Alpha Centauri; sustainability.

Several global themes like sustainability, immigration and democracy have reached a significant level of spread and, at the same time, ambiguity. Indeed, according to the current fragmentation of positions, traditions and voices, the awareness of a plurality of viewpoints on our world is increasing (Griswold, 2012). Such a complexity strongly affects qualitative methods in Sociology (Silverman, 2004), whose aim is to explore how individuals interact with cultural and social elements with the support of interviews, focus groups, participant observations and so on. The confusion provoked by Modern (Giddens, 1991) and Post-Modern (Bauman, 2000) trends makes this goal challenging to reach: the weakening of meta-narrations (e.g., political ideologies, religions) and the increasing relativeness of perspectives (e.g., intercultural debates, immigration flows) struggle with a coherent overlook about the here and now (Hodkison, 2011). This is especially glaring in social research when subjects recruited are asked to comment dense topics, that are, issues characterized by a significant level of complexity and vagueness (e.g., the three concepts mentioned above). For example, democratic values seem to be always incontrovertible, but their functioning depends on the specific context in which they are applied. From 2010 to 2012, the 'Arab Spring' revolution proved that national factors were fundamental in empowering or impeding this form

of government. Yet, the recent tragedy of Syrian refugees represents another delicate issue between humanitarianism and border control. Although clear arguments might be advanced, opinions are often ambivalent and even blurry because of the intricacy of variables at stake.

Digital games may work as an engaging tool for overturning this impasse and strengthening reflection among individuals. Their effectiveness in education has been proved (Ferdig, 2014; Gee, 2005) as well as their potential, which goes beyond the mere escapism: genres like serious games, persuasive games and newsgames (Bogost, 2007) address groundbreaking themes such as intercultural empathy, civil war victims, and consumerism (e.g., This War of Mine, Papers, Please). In light of that, their contribution in researching dense topics may make a difference. Coherently, the article aims to stage a first intervention in this direction with an emphasis on subjects' creativity. Specifically, a game-based set of interrelated methods is suggested in order to exploit the medium in facilitating individual positioning about delicate themes. Its theoretical premises are founded upon principles drawn from Sociology, Media Studies, and Game Studies. It was empirically tested with four groups of players in one year of research. Sustainability was the dense topic deepened and Sid Meier's Alpha Centauri (1999) and Crusader Kings 2 (2012) worked as interactive stimuli. The essay is structured as follows: in the first section, a theoretical overview about digital games and social research is proposed; the second focuses on the procedure on which the analysis relies, while the third depicts the research design and the fourth is about the results; finally, in the fifth conclusions and suggestions for future developments are provided. The intervention was found effective in increasing subjects' reaction and reflection, but further inquiries are required due to its limits.

Digital Games between Potential and Research

Games as Stimulating Reductions

As observed above, in the globalized world certain social phenomena imply considerations that are difficult to picture. The related flows of information are so overwhelming to the extent that taking a stand is stressing to envision (Hodkison, 2011). Nevertheless, cultural consumption can be of help (Jenkins, 2013). As Appadurai (1996, 31) argues, imagination is a new critical practice through which we relativize and better understand reality. Intuitively, media contents provide several opportunities to expand our perspectives: movies that show us different contexts, news channels that cover foreign countries previously ignored, and so on. Because of their popularity, digital games may be capable of such an outcome. Their exclusive feature relies on the alternative structure triggered, that is, the concept of 'magic circle' itself (Huizinga 1938) – i.e., the environment defined by the game rules in which different behaviors and schemata may be staged. Indeed, even if the definition of game is highly debated

(see Juul, 2005), it can be argued that a ludic experience always relies on a difference from routines (Montola, 2012). Although some scholars (see Castronova, 2005; Consalvo, 2009) have problematized and even criticized the margins of the magic circle, in which behaviors and stereotypes from the outside actually matter, the idea of a gap from expectations is still productive. Goffman (2003) claims that play boundaries are membranes rather than barriers: concepts, scripts and values are exchanged across non-gaming and gaming sides. Thus, personal stories and traits affect the perception of gaming (Consalvo, 2009; Crawford and Goslin, 2009) and, in turn, ludic entertainment is able to trigger introspective reflections (Isbister, 2016; Lazzaro, 2004). Accordingly, such a differential space can enable learning dynamics, allowing researchers to deepen individual positions toward real problems (Flanagan, 2009). Pursuing this line, first video games were designed as simulations for predicting hypothetical scenarios in safety (Crogan, 2011). This potential matches the human tendency to detect redundancies to reduce sources of anxiety (Di Maggio, 1997; Giddens, 1984), and game designers have highlighted this orientation also among players (e.g., Elias, Garfield and Gutschera, 2012; Sylvester, 2013). From a Sociology of Culture' perspective, these categorizations are at the core of the concept of culture, which becomes the repertoire of tactics, guidelines and schemata through which individuals deal with their own life (Di Maggio, 1997; Swidler, 1986). Although they are partially autonomous in ruling this framing process, their social context is an important variable to ponder. People live in specific societies with peculiars habits and representations, and criteria of normality are relative rather than absolute (Hall 1997). Furthermore, the network of acquaintances (e.g., friends, family) is crucial in terms of models adopted. Fine suggests the term "idioculture" (Fine, 1979) for referring to such a micro-culture, which was proved to be effective also in dealing with media and design practices (Lecusay, Rossen and Cole, 2008; Lim et al., 2011). Digital games can affect these shared strategies confirming or confuting them with their dynamics. They may set the premises for fostering a "cultural agency", which Sewell (1992) defines as the ability to adapt personal schemes and scripts across multiple frames. The challenge is to shed light on how to make this passage (from games to reality and vice versa) happen for research purposes.

Across Social and Game research

Social research with human subjects and Game User Research, that is, a field across game industry and academy that focuses on players (Isbister and Schaffer, 2008), have several elements in common, not least the core attempt to compare what people think to do (i.e., attitudinal data) and what they actually do (i.e., longitudinal data). The reference is to the gap between "practical consciousness" – i.e., the concrete actions performed by an individual - and the "discursive consciousness" – i.e., the manner in which that individual describes his/her behaviors and positions - (Giddens, 1984). The point is that these dimensions often diverge: the tendency to depict personal doings as rational

and planed acts is frequent even when they are not (Silverman, 2004). As observed by Ricoeur (1990), personal perceptions are intrinsically narrative and ruled by a constant need of coherence. Therefore, a widespread solution is the adoption of a triangulation of methods combining observation and qualitative/quantitative inquiries in order to reach a multi-angle overview (Denzin, 2006). In game research, this approach is taking a foothold as well by merging game data, direct observation and subjects' reports (see Seif El-Nasr, Drachen and Canossa, 2013). However, such an empirical possibility is hard to finalize if the research object concerns dense topics. As anticipated, these issues are challenging to address insofar they are neither directly experienced nor observable.

An indirect confirmation of this struggle comes from the limited range of themes addressed by empirical investigations in Game Studies. Instruments like surveys, interviews and ethnographies are widely applied in the field (e.g., Ermi and Mäyrä, 2011; Krzywinska, MacCallum-Stewart and Parsler, 2011), but their scope is often limited to the medium per se (e.g., game habits, identification with the avatar). In addition, they frequently overlook the systemic features (e.g., rules, heuristics) of the products involved, which are crucial factors in eliciting game meanings. Regardless, the conviction that leads this work is that digital games may be ideal tools for shedding light on dense topics because they can 1) foster both practical and discursive consciousness and then 2) strengthening their connection. Accordingly, researchers will better understand subjects' related positions and individuals involved will improve their awareness toward the dense topic analyzed. The article pursues this line by suggesting a game-based method that aims to explain and finalize this opportunity.

Staging an Aware Play

According to these premises, the research question that guides the analysis becomes:

> if games and digital games can be considered a productive support for fostering reflections about dense topics in social research, what are the empirical steps required to realize (or try to) such a potential?

The answer is staged into two progressive steps. The first is composed by in-depth interviews and focus groups aligned with pertinent gaming sessions in order to stimulate a preliminary round of feedback. Consequentially, the second phase allows participants to be active in reformulating those games through the lens of the targeted dense topic. Playing and designing work as practical activities that are constantly described and put to the test by the subjects themselves.

Digital games as mechanics and representations

The selection of pertinent video games (in relation with the research focus) is not an immediate task. Researchers should categorize game traits that may be associated

with the dense topic in order to stage a productive research session. Intuitively, this assessment depends on the issue and the digital environments deployed. In the following pages, a framework is proposed according to the study described in the article. Being its focus on a system oriented dense topic (see third section), some dimensions like aesthetics and narration have been overlooked although they can be relevant in dealing with other themes.

Each game variable is visualized as a continuum with opposite extremes. The core distinction applied is the one advanced by Mäyrä (2008, 17) between "(1) core, or game as gameplay, and (2) shell, or game as representation and sign system". The former regards rules, mechanics and generally the interactive dynamics triggered, while the latter refers to the symbolic and representational layout (e.g., aesthetics, story). Together, they generate the overall meaning of a video game.

In this specific study, the core was framed according to:

- Range of possibilities [a]: autonomy as a potential range of action given to players by the game system (Adams and Dormans, 2012). The extremes are: mechanic supremacy, when the game world seems to be an objective one in which players appear similar to other virtual entities (e.g., an Artificial intelligence [AI] that can perform the same actions of the player); and railroad station effect, a condition in which the AI harnesses a predictable set of cause-effect patterns to the extent that the human presence is underlined in some way (e.g., when the avatar deploys unique abilities).
- Heuristics [b]: the "rules of thumb that help (. . .) [players] play the game" (Elias, Garfield and Gutschera, 2012, 29). The extremes are: heuristic domination, when we are able to rule and predict the ludic system (e.g., dominant strategies that can be easily reiterated); and heuristic saturation, when the game structure is elusive and a total control is out of reach (e.g., when random dynamics make the game feedback hard to predict).

In turn, the shell was investigated in terms of:

- Environment [c]: the setting of the play. It could be unrealistic or realistic. The extremes are adherence to a past established situation (play as re-revealing act) (e.g., a realistic historical simulation); and mimicry of an already existing system in order to envision and delineate a hypothetical scenario (play as prophecy) (e.g., a game sets in a near future in which pollution is out of control).
- Accountability [d]: the manner in which the gaming system deals with reality (or an idea of reality). Accountability can be fostered by documented sources (objectified asserts) (e.g., real data concerning demographics and economic trends) or fictional ones (cultural memories) (e.g., glaring references to media content and topoi).

These features were selected because they address both the agency given to players and the cultural setting that characterizes and frames the gaming experience (Eugeni, 2010). As we will see, they will fit into the dense topic chosen; however, their scope is broad enough to the extent that they can be easy generalized and readopted for other research objects.

An empirical proposal

Concerning the empirical intervention, two progressive phases are advanced. The first battery of methods follows qualitative guidelines aimed to gather attitudinal data (Silverman, 2004). Its targeted objectives are the 'frames' (Goffman, 1974) - i.e., frames of reference through which individuals give meaning and sense to events - emerged in the discursive reports of the gaming experience. Specifically, frames are the key labels for interpreting a situation and staging a pertinent behavior. For social researchers, they are essential cornerstones in collecting subjects' perspectives from the analysis of self-transcriptions, interviews and focus groups.

Specifically, the instruments suggested are:

- Private play session: subjects privately test the games recording their ideas and feelings in written reports. This session is coherent with the logic 'performance before competence' (or, more commonly, 'learning by doing') (Gee, 2005) in order to avoid constrictions imposed by researchers.
- Single interview (one per subject): the objective of this phase is to collect through in-depth interviews (Silverman, 2004) positions and perceptions about the gaming consumption.
- Final focus group (one per group): the third step is a group discussion (Frisina, 2010) about in game patterns, feedbacks, strategies and themes individually developed in previous phases. The intent is to get a shared overview of game sessions and, if possible, a collective narration about the dense topic. If the group is already consolidated, it is also a chance to deepen its idioculture as a fundamental factor of reference. From this step, the researcher should create an online blog to give continuity to the debate.

Reached this standstill, less canonic and more creative ways may succeed in stimulating subjects' awareness toward a dense topic. Participative and deconstructive design can be of help (Gauntlett, 2007) exploiting agency, participation and even responsibility as drivers of learning.

Following these principles, three further steps follow:

- Spring analysis: in the first part, subjects label together core and peripheral elements of the game, then change them and try to figure out the result. Consequentially, participants deconstruct ludic systems following the "contractile

elasticity", which is a swing between "tight design" – i.e., a design that keeps only the essential rules - and "elastic design' – i.e., - a design that takes into account both fundamental and minor mechanics - able to enlighten how games work, may work and cannot work (Bateman and Boon, 2006, 110-114).

- Incorporation-difference challenge: the group is subdivided in two teams. The first proposes five games/cultural products and the second has to incorporate a feature (e.g., a character, a rule) from each one within the game trying to maintain its original identity; then, the roles turn. The objective is to enrich with further cultural and cross-media references the reflection about the game's meaning.
- Carding game design: it relies on two exercises based on a deck composed by three 15 cards subcategories (A, B, C). A subject picks one card from E and has to propose a game associated with the concept on it. Another one does the same thing with the F category continuing the previous statement but combining it with the new word. Finally, a third participant extracts the last card and closes the circle (further subjects plays a consulting role). Creations should be fast and the entire exercise must last no more than 20 minutes with a final hypothetical product. Therefore, the roles turn generating several proposals in a couple of hours. The first exercise is the satellite design, which means developing a sequel-remake of the game; the second exercise is the alternative design, in which subjects have to create a whole new project. A category contains a driving value (connected to the dense topic), B suggests an element (e.g., rules, characters) from the original game to maintain (satellite design) or a new feature to implement (alternative design) and C concerns the productive context/target (e.g., Kickstarter, AAA production, casual or hardcore gamers). The content of the cards is chosen from the state of art of the dense topic addressed, practitioners' suggestions and the current game industry's trends.

In the end, a final group discussion is planned to point out conclusive reflections. In that occasion, if not emerged yet the dense topic is clearly introduced to subjects and collectively deepened. The overall intent is to stimulate subjects' discursive consciousness alternating different practical strategies. Video games function as facilitating tools with which deconstruct the experience and stress reasoning, while the focus is increasingly on the dense topic. These research steps partially follow the experiential learning theory (ELT) (Kolb, 1984): games work as a practical setting, the interviews function as initial recap and observation, first and second creative exercises generate further abstract-operative concepts and the final re-design is a new situation of testing. From a traditional assessment, we gradually pass to an agential effort highlighting a constructive attitude (Egenfeldt-Nielsen, 2007): framing, making and ting elements, subjects become able to visualize and better understand themselves, their positions and range of action (Gauntlett, 2007; Wing, 2006). Finally, the creativity related to the second phase is considered a blending activity (Turner and Fauconnier, 2002), in which

different domains of meaning are provided and associated (i.e., game design and sensible themes) to trigger new ideas. Group creativity (Nemeth and Staw, 1989) is harnessed too, and the first phase and the carding game's turns are planned to facilitate minor perspectives and prevent homologating positions (Ng, 2003).

Moreover, the approach is coherent with the player-centric approach in game design, that is, the priority given to the player's point of view in the productive process, which is increasingly popular among practitioners (see Bateman and Boon, 2006; Fullerton, 2008). The core objective of this procedure is to push beyond the limits of common qualitative procedures by adding a design activity, which is still uncommon in social research. In order to detect a related improvement in discursive awareness after such an intervention, the main criterion of assessment selected is the "narrative positioning" of the Self. As argued by Bamberg (1997), we are referring to the modalities through which individuals describe themselves within their own stories. Indeed, in personal narrations people can describe and depict their actions, behaviors and identities in a variety of ways, from passive and/or uninformed to active and/or conscious positions. Specifically, I subdivided this dimension in two main orientations echoing Mäyrä's distinction between core and shell. The first is the symbolic one, which concerns the attributions of content that subjects give to a dense topic. For example, how the targeted issue is described as a concept (e.g., formal description of democracy). The second is practical and addresses the range of action felt by participants toward a dense topic or a related activity (e.g., playing a digital game about the theme). For instance, what they actually do/can do in dealing with it (e.g., personal efforts in supporting democratic values). Intuitively, the former is more abstract and is expected to be served by the first group of methods; conversely, the latter entails a certain level of agency and the design-oriented exercises aim to stimulate it.

The Research Design

Sustainability as a dense topic

Sustainability, which was a topic deepened in a previous research (see De Blasio and Sorice, 2013), was selected as an exemplar issue to validate this proposal. Addressing the synonymous concept of sustainable development, the reference is to a "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland Commission, 1987, Chapter 2, para. 1). Attempting to sketch a provisional definition, sustainability can be interpreted as a long-term synergy among different (social, natural, etc.) interacting systems aimed to preserve them as a whole. Related well-established domains are environment, social equity and economics, however the multiplication of standards and sub-categories is spreading; indicators of international institutions and agencies (e.g., Human Development Index, World Bank) are heterogeneous in their descriptions appearing

broad databases rather than focused indexes. Coherently, globalization processes have implied volatile feelings (or at least a latent idea of them) about how different cultures and geographical areas can (or cannot) co-exist (Griswold, 2012). In turn, societies per se have become more articulated and specialized than in the past (Giddens, 1991). To summarize, sustainability represents a perfect dense topic because of its blurry meaning, which is challenging to frame and even harder to experience directly, and social relevance, because it concerns our living and, above all, the future.

The testing games

According to such a complexity, the simulation genre seemed the best choice to stimulate a pertinent reflection. Indeed, in this type of games players manage multiple variables according to a reference environment that is replicated in some aspects (Frasca, 2003). Coherently with the game-feature categories described above, Sid Meier's Alpha Centauri (AC) and Crusader Kings 2 (CK2) were chosen due to their complementary traits. From an agential point of view, the first follows a railroad station effect and a heuristic domination presenting a guiding plotline and a dominant strategy (i.e., the symbiosis of the planet embodied by the ecologist faction). On the contrary, the second is characterized by a complex structure with several sub-systems that sets a heuristic saturation and a mechanic supremacy. Concerning representation, AC is based on a play-as-prophecy, taking place in a classical Sci-fi future with connections to scientific, political and sociological theories and a layout derived from the famous Civilization series (the lead designer, Sid Meier, is the same indeed). CK2 is partially the opposite: it tries to mimic the dynamics of European Middle Ages without filters and facilities and then stage an accurate reproduction of a past situation. Finally, their reference to the dense topic is present but not glaring to the extent that players were able to develop their own interpretation. These features were framed before the empirical process, and then they were confirmed during the research by the subjects themselves. In the first empirical step participants were asked to play both the games for exploiting the comparison between CK2 and AC as a stimulus. Then, they had to choice one for incorporation-difference and game card design activities.

Timelines, subjects and modalities

The study involved four Italian friendship groups already involved in a research on nerd and geek cultures (reference removed for blind review). Their members aged 25 to 35 in order to interact with already established perspectives and the selection was done according to two criteria linked to the games adopted: familiarity with the simulation genre (i.e., agential predisposition) and familiarity with the cultural dimension (i.e., representational predisposition). These premises were already known because of the previous analysis. The first group (G1, N=5) was skilled in PC simulation genre and their idioculture was influenced by a remarkable passion for Sci-Fi topoi

and an analytic approach in cultural consumption. According to Salen and Zimmerman (2004, 267-280), they can be labeled as "dedicated players", who look for a mix between hard fun - i.e., high-level challenges and tasks - and serious fun - i.e., meaningful plays that address serious topics (Lazzaro, 2004). Thus, they showed both representational and agential predispositions. The second group (G2, N=4) played more heterogeneous types of products instead. Their preference was to digital games with strong narratives, curated aesthetics and evocative settings. Moreover, they managed a website about video games and manga quite known in Italy. Referring to the previous labelling, they match the "standard player" category with a peculiar predisposition for easy - i.e., simple escapism - and social fun - i.e., playing with peers. To sum, they had only a representational familiarity. The third group (G3, N=5) showed a competitive attitude and a relevant competence in boardgames and carding games. They appreciated products that require a high level of expertise (setting is not relevant) and they stated that their ludic consumption does not concern their personality. In conclusion, they are hardcore gamers with a pure escapist orientation and then an agential predisposition. Finally, the fourth group (G4, N=6) was relatively new to several gaming practices, with the exception of classic boardgames (e.g., Risiko) and some mainstream digital games. They fit into the category of casual gamers with a rhapsodic consumption of accessible games looking for easy fun. As a consequence, they do not have either familiarity. As evident, these groups relied on complementary positions; their diversity was functional to stress this proposal. Informed consent was given to subjects before the investigation. The private play of both the games lasted one month and the following exercises were done in weekly 2-hours meetings for a further one, from June to August 2013 (G1 and G2) and from February to May 2014 (G3 and G4) in private settings. Transcriptions of qualitative interviews, focus groups and blog posts (N=113) were analyzed through NVivo software (v. 10) by applying a frame analysis (Goffman 1974) for outlining redundant frames of references, perspectives and interpretations. In order to assess a possible increment of awareness through the empirical intervention, I asked subjects to think about an operative definition of sustainability both in the invitation to play (i.e., an introductory meeting) and during interviews (single as collective) to establish a starting point. Then, further control moments were at the end of the first phase (median point) and after the re-design activities (final point). For the rest, the dense topic was not mentioned for reducing researcher's influences.

As anticipated, symbolic/practical positioning was considered as analytic parameters. In order to detect an improvement, the analysis addressed how qualitative transcriptions (from interviews, focus groups and blog posts) about sustainability were expressed. Specifically, a discursive analysis was applied with a focus on 'conversations' – i.e., the debating topics, theses and related rationale explored by a specific social group (Gee 2012, 28-29). Therefore, the focus went on the level of argumentation (number of sentences adopted, number of real references and number of theses advanced toward

the dense topic) and the individual involvement expressed (presence and frequency of personal pronouns, action verbs, propositions and associations with personal statements and traits) as control parameters. The expectation was to pass from a narrow positioning (faint argumentations, few sentences, no individual engagement, etc.) to an articulated one (several theses, manifestation of personal and group interest, etc.) in both symbolic and practical dimensions.

Results

As expected, the starting point pictured rough positions about sustainability. The most frequent term associated with it was environment as a dimension to preserve. However, descriptions were faint and simple (neither contextualization nor analysis), and there was not direct involvement. As reported in Table 1, this condition changed according to groups and games chosen.

Group	Starting point	Median point	Final point	Positive game elements	Negative game elements
G1	Narrow positioning	Improvement of practical positioning	Articulated positioning	-railroad station effect -heuristic domination -cultural memories	-mechanic supremacy -heuristic saturation
G2	Narrow positioning	Improvement of symbolic positioning	Articulated positioning	-mechanic supremacy -re-revealing act -objectified asserts	-railroad station effect -play as prophecy
G3	Narrow positioning	Improvement of practical positioning	Articulated positioning	-railroad station effect -heuristic domination	-heuristic saturation
G4	Narrow positioning	Improvement of symbolic positioning	Articulated positioning	-heuristic domination -objectified asserts	-play as prophecy -cultural memories

Table 1. Results

The first group

G1's passion for classic Sci-Fi topoi and computer games meant a fast recognition of the references in AC, improving its accountability and value. It is singular that during the pure qualitative step they referred to issues concerning sustainability more on a practical level along with the strategies deployed (e.g., balancing the different sub-systems of AC) than on a symbolic one. Only through re-design exercises they outlined a more complete awareness connecting the main game theme to the dense topic. According to single reports and interviews, the memorial patina worked as a cultural fog: they were so involved in the retro-appealing of AC to the extent that they did not think to contextualize it. Dealing with CK2, they preferred a system able to emphasize players' presence and to be dominated. In other words, the controllable

setting of AC better served such a need of control. Thus, the mechanic supremacy and the heuristic domination present in CK2 were badly perceived: G1 was unable to build a 'system thinking' (Gee 2005, 36), that is, a coherent perspective on the essential procedures that rule a game. This preference to manageable settings was confirmed in creative experiments with AC. The winner remake-project, Neogaia, is focused on the environmental dimension (A). The asymmetrical structure (B) is guaranteed by several ideological parties with which players have to coexist and cooperate. In addition, game units cannot fight but only interact/share while an articulated resource system is implemented. Therefore, the green ideology of AC was spread across a more extended and variegated structure.

The complexity of this project was supported by an average budget (C), which is adequate but without the requirements of major productions in terms of repetitive standards and high sales. Regarding the alternative design, G1 chose Subcity, which is a mix between an urban simulator and AC focused on sprawls (A). Players can be the major of the city or leaders of single areas who try to expand their influence. The game dramatically changes according to this switch: in the former case, the macro management (B) is prevalent; in the latter, users can improve their conditions through a sort of cultural guerrilla (sitting-in, alternative propaganda, etc.). The chain of in-game decisions is limited to simple couple-choices (e.g., decision X or decision Y?) because the targeted audience is an unskilled elderly one (C). In conclusion, sustainability becomes a puzzle to solve, a mission whose achievement is potentially under players' control. Framing and experimenting all the related variables becomes the key point. To summarize, G1 preferred a ludic experience in which the feeling of ruling the system was tangible in order to develop a pertinent reflection. According to their words, this need of analytic control was due to their scientific inclination (they are all students or professionals in Engineering, Computer Science and Biology) and related deconstructing approaches. This attitude, which was already glaring in single interviews and reports (actually analytic descriptions with variables and tables), was confirmed by the highly technical group discussions and blog debates, which were characterized by references to scientific axioms and ethical issues.

The second group

On the contrary, G2 was enthusiast about CK2 using it as preferred game for re-design activities. Middle Ages were appreciated as a leading context, and the objectified accountability was positively judged legitimating the complexity of the gameplay. Concerning this point, they interpreted the game as a black box to experience and explore: while the re-revealing orientation meant a blank page to fill and unfold, the mechanic supremacy was associated with a significant autonomy in playing. During the first phase, they developed a relevant cohesion in describing sustainability as the ability to balance different systems and needs. As a consequence, they embraced

the multicultural issues of the topic coherently with the importance of diplomacy in CK2. However, the complexity of the game discouraged them to stage a conscious practical positioning. This lack was successfully addressed in the re-design phase: their winning sequel, Crusader Queens, focused on gender biases in society (A). The setting spans from ascent times to suffragettes and the available characters, all female, act in the backstage in order to preserve historical accountability. Beauty, passion and charisma become further elements to handle to improve gender emancipation and rights. The game maintains a remarkable amount of sub-systems (B), but it takes place in reduced environments (e.g., the royal court) because the type of production is an app for smartphones (C). The alternative project is Dumpworld, a management game in which players must lead the Italian business of garbage (A) interacting with institutions and organized criminality as well. The gameplay is based on a turn-based structure with a preponderant diplomatic phase (B) depending on human relations and variables, while the selected target is hardcore gamers (C). Informal power and interpersonal relation issues are empowered within a focused visual; these features become central also because, according to G2, an obstacle for a better comprehension of sustainability is the absence of transparency among global actors. To conclude, G2 subjects were indifferent to master the system and they tangibly followed the imaginative attitude that they claimed to have: a skill that is easy to activate and can cover even austere gameplays as the CK2's one. Concerning the dense topic, the operative idea of sustainability fostered a micro and aesthetic-oriented response: the issue requires a human empathy and a fair communication at its core to be perceived by people. This attitude was evident also in their alternative projects, in which their tendency to break organizations into their human elements was influential. Thus, G2 reinvented CK2 by embedding a strictly personal and human-oriented perspective, which was connectable to their efforts in divulgation (that 'allow us to comprehend others') and education (they all are or were students in Human Studies, a field that 'open your mind' and 'put you in someone else's shoes') as stated in single reports/ interviews, discussions and blog posts, which were characterized by ingame stories in which identification was glaring.

The third group

G3 was positive toward AC, esteeming the tangible feedback and the clearness of its system. They were able to stage personal strategies and they liked that feeling. Conversely, CK2 seemed too dense for them. Although the difficulty was low and the artificial intelligence became predictable after some plays, they found the available variety of tactics in AC satisfying. They initially focused on the practical positioning (like G1) because of the need to be competitive. Their reasoning about AC's gameplay was interesting because it relied on concepts like 'main ground to respect' and 'frugality', which are terms that are often associated with sustainability. For the

remake, G3 created the game Major-among-stars that promotes green economy (A). The mission is to become the most important trade company of the new planet. The heuristics (B) are kept through a dominant strategy that rewards the co-existence with Alpha Centauri. The product (C) is an app for smartphones using geolocation, thus they envisioned a game in which players have bonuses visiting real companies with both virtuous environmental policies and high profits. The alternative project is Green army. The main topic is the safety of the forests (A), a theme that subjects set in a near future where pollution is out of control and players are the leaders of an ecoterrorist army. The drawn mechanic (B) is a centripetal feedback that damages who is winning in order to improve a constant re-balance: in light of that, there is a parallel increase between players' power and hostility of Earth. The target (C) is a primary school - audience, thus their choice went to a simple shoot'em up in which you have to command an environmental navy with paralyzing weapons. To summarize, through the re-design phase the symbolic positioning was improved with a peculiar definition of sustainability as an active and militant attitude to fight against opponents with their own weapons. In the first exercise, economic success worked as a forced step to rule other ideologies contrary to environment. In the second, players have to use violence (even if non-lethal) to overcome violence. This perspective is clearly related to the pragmatic approach that during interviews and group discussions they claimed to apply in ludic consumption. At first, they represented the most convinced crew in maintaining the gaming consumption separated from serious reflections. However, during the research they applied challenge-based solutions (coherent with their ludic habits) to the sustainability's issue. Accordingly and as proved by blog posts and the final discussion, they realized that in their life digital games were a more important reference than what stated before.

The fourth group

Unexpectedly due to its low gaming skills, G4 was struck by CK2. The complexity of its mechanics astonished them, who ignored that digital games could be so articulated and deep. In addition, the objective references assured the group about the game consistency. Even if the training period was difficult (single reports were characterized by confusion and a little bit of frustration), in one month each member was able to understand and rule the system. The multiple management staged by its gameplay enhanced a symbolic positioning, which framed sustainability as the rationale that should guide different interconnected environments for the best mutual advantage. AC was less appreciated because of its retro and 'banal' references. The re-design phase with CK2 enlightened further aspects. They created a remake, Modern Kings, with a focus on the Cold War (A). The agential element to keep (B) is once again the variety of variables to handle in a strictly independent production (C). With these premises, they pointed out a gameplay referred to an adventure game with frugal

graphics and in which players are European spies who must prevent conflicts dealing with happiness of people, security and international balances. The alternative project is titled Mementum: the main topic is the consciousness of the past (A) as an antidote to the spread nonchalance about future. They had to introduce only one main resource (B), which was the time: players are meta-observers who try to save the planet by travelling through different historical periods. Adolescents are the target (C), then they proposed again an adventure with multiple narrative lines, in which the objective is to overturn catastrophic events: the range of action depends on the time gatheredpuzzle after puzzle. It is interesting that they chose an adventure gameplay based on puzzles for both their creations. Discussing that preference, it emerged that it was due to the assuring structure of the genre (generally linear and plot-oriented): the complexity of AC and especially CK2 represented a surprise for them, and they compensated this shock with a simpler gameplay. In these terms, a conscious practical positioning was reached: sustainability is something extremely complex but now open to subjects' stories and interpretations. As a consequence, the issue becomes comprehensible and possible to deepen.

Despite the different evaluations, in the spring analysis a relevant similarity among groups' assessment of AC and CK2 emerged. For instance, each group agreed that there is a dominant strategy in AC, and that its artificial intelligence is redundant and repetitive; therefore, diplomacy becomes a peripheral feature that should be enhanced in order to improve variety. Moreover, heuristics were reported with a decreasing complexity play after play: a feature that helped the communication of the AC's environmental meaning (clear to everyone) but damaged the re-playability of the game. Concerning CK2, criticisms addressed the tutorial because of its incompleteness. In addition, G2 and G4 agreed to expand or erase intrigue phases, buildings construction, war management and technological progress, which were traits considered in the middle between central and peripheral features. Diplomacy was unanimously labelled as the core mechanic, insomuch as one member of G2 proposed to remove the visual layout and two of G3 the war patterns because they are 'purely decorative'. Another suggestion from G2 and G4 was to strengthen the characterization of the protagonist in order to improve the overall appealing of CK2. The incorporation-difference exercise was significant about one specific point. Although the cultural products proposed (from several Sci-Fi TV series to popular sports) and the consequent reactions were heterogeneous, for G1 and G2 the addition of a no-playable arbiter of sustainability (e.g., an environmental resistance) incarnating the opponent, who or what is in danger for the lack of sustainability, represented a recurrent desire. The impression was that that feature could improve engagement in G2's perspective above all; for G1, such a resistant presence might give the game more effective identity and direction.

Concerning the other projects designed during the card game exercise, G2 created a series of characters/factions embodying prejudices, passions and sensuality, which portrayed the uncontrollability and the emotional side of humankind. A similar operation was done by G1, even if with a spotlight on economy and technological theories that confirmed their systemic and macro orientation. G3 was more inclined to create products with a competitive structure and a recurrent switch of situations and rules; according to them, sustainability has to be conquered and only a significant and even frustrating challenge can transmit this message. They usually chose realistic settings without filter (e.g., a nearly future) in order to let the current news and the reality communicate the theme of their games avoiding ideologies and moralism. G4 instead was more inclined to highlight the narrative dimension in terms of fiction (they were focused on plot rather than on characters, whereas G2 was the opposite), trying to linearize and make more intelligible the complexity of CK2 (as written above something attracting but at the same time disorienting).

Conclusions

The four groups developed comparable but different visions about sustainability, confirming their background but staging also new perspectives. The strengthening of a practical positioning before a symbolic awareness was a surprise in dealing with G1 and G3, and G4 showed an attention similar to others despite the low familiarity with the medium. Regardless, for each crew the re-design phase was fundamental to reach a multi-angle consciousness. Traditional methods did their work, but creative/participative activities added further stimuli intertwined with personal and group traits. Subjects shed light on personal positions that they partially ignored triggering a self-revealing reflection. Furthermore, all the groups are now involved in sustainability issues and more confident about their internal dynamics. To summarize, the procedure staged for answering the research question seems to succeed.

Implications are noteworthy for both scholars and practitioners. Addressing the former audience, the redesign phase showed a wide effectiveness in eliciting subjects' reaction despite the complexity of the topic and the variety of the groups. Furthermore, it was able to engage them, who participated enthusiastically and without resistance; such an outcome should not be taken for granted in research. In addition, the game features selected, which are broad and detectable in several games and genres, are now better understood and contextualized. Therefore, they can be harnessed in a more conscious way in further analyses and explorations according to the characteristics of the sample recruited. Regarding the latter category, subjects' reports presented a multitude of suggestions and insights for improving AC and CK2. With proper modifications, the triangulation of methods described in the article can turn in a systemic procedure for

testing games per se and developing new ideas. In addition, it could be argued that also other media can benefit from this intervention, although digital entertainment is characterized by a specific textual openness (Aarseth, 1997; Eco, 1983) that facilitates subjects' interpretations.

Nevertheless, this proposal has three main deficiencies. First, collective ideas took the priority on single contributions because of the group orientation of the study. This approach was chosen in order to stage a more sustainable exploration and harness group dynamics as a facilitator of expression (Frisina, 2010), but minor perspectives were relatively sacrificed. Second, the orientation of the study was strictly qualitative and focused on a specific topic with a small number of participants; further researches are needed for stressing its validity. Third, this type of inquiry requires a significant engagement from the individuals recruited, and the study took advantage of the fact that subjects were already involved in personal and group terms and used to play games. Regardless, the outcome is promising and suggests to proceed in expanding such a set of methods toward new themes, samples and gaming genres.

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