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Connecting Narrative Worlds

Report on the 6th International Conference for Interactive Digital Storytelling: "Connecting Narrative Worlds", Bahçeşehir University Istanbul, November 6-9, 2013

The International Conference for Interactive Digital Storytelling (ICIDS) is the premier international conference on research and practice covering topics such as video game narratives, interactive storytelling, interactive drama, and interactive installation art concerned with storytelling. Situated in an interdisciplinary field concerning aspects of computation, digital media and the humanities, the objective of this conference series is to promote understanding and dialogue between researchers in narrative theory and computer science, as well as designers, transmedia and digital artists, and video game scholars. Consequently, many of the contributions discuss narrative theory; often applying established perspectives in novel ways and adapting existing vocabulary.

The origins of the conference series date back to a workshop on interactive narrative tools held at Fraunhofer Institute in Darmstadt in 2000. In 2008, two European conference series (Tidse [Technologies for Interactive Digital Storytelling and Entertainment] and ICVS [International Conference on Virtual Storytelling]) merged to form ICIDS and start the present series. The 6th iteration of the ICIDS conference, held at Bahçeşehir University Istanbul, was organized by the Games & Narrative Research Group, consisting of Hartmut Koenitz (University of Georgia), Mads Haahr (Trinity College Dublin), Gabriele Ferri (Indiana University), Digdem Sezen (Istanbul University) and Tonguc Sezen (Istanbul Bilgi University) together with Güven Çatak as the partner at the host institution.

Interactive Digital Storytelling is an exciting area in which narrative, computer science and digital arts converge to investigate new expressive forms. The combination of narrative and computation has a considerable untapped potential: from artistic projects to journalistic communication, from assistive technologies and intelligent agents to serious games, education and entertainment. At the same time, these new expressive forms challenge existing theoretical models and analytical approaches, even more so as advances in computation and novel applications create a constantly growing field for research. Concern with the application and extension of narrative theory for digital interactive narrative is a prime topic for many researchers, while others focus on practical experiments and empirical research. The latter area was more prominent this year than before and speaks of an established academic field that has outgrown its beginnings as a mostly theoretical and experimental undertaking.

Supported by the host university and several corporate sponsors, the conference was attended by about 100 academics, digital media practitioners and artists, a testimony of the vibrant community and growing interest in the field. Papers from 25 countries as far apart as Australia and Kuwait were submitted to ICIDS 2013, showing that the interest in this field is not only sustained but also universal. The ICIDS conference series has a long-standing tradition of bringing together theoretical and practical approaches in an interdisciplinary dialogue. The motto for ICIDS 2013 "Connecting Narrative Worlds" expresses this need to build bridges of understanding across different fields.

Historically, a major focus in the field was on the application of artificial intelligence, specifically on computational generation and control of narrative structures. In 2013, research into video game narrative became a major topic along with a strong emphasis on empirical data collection and analysis. After years of a primacy of visual representation, the video games industry is showing an increasing interest in narrative, as exemplified in big budget narrative game titles like *L.A. Noire*, *Heavy Rain*, or *The Walking Dead* game. On the other side, researchers in video games studies focus increasingly on the narrative aspect in many titles. Another emerging topic this year was the application of specific aspects of narrative theory.

With two keynotes from the game design field the organizers reflected the increased interested in video game narrative. Game designer and interactive storytelling expert *Ernest Adams* introduced a classification system designed to pre-determine desired elements and plan interactive narratives, while the independent game developer *Adam Russell* talked about his practice in creating experimental interactive narratives.

The final keynote was given by renowned artist *Toni Dove*, who reported on her embodied interactive storytelling practice. Dove, a pioneer of narrative-focused digital installations and digitally mediated performances, reflected on the artistic opportunities afforded by digital technology, and the changes during the past two decades, by way of her works and changing methods.

The 14 long papers, 8 short papers, and 10 posters were presented over the course of 4 days, subdivided in different thematic areas, all related to digital technologies and narrative applications. After an overview of the sections, for a better understanding of the scope and methodology the following sections will provide short overviews of some of the contributions.

Models, Theories and Vocabulary

The section on "Models, Theories and Vocabulary" offered contributions from the fields of semiotics, narratology, performance studies and film studies. Contributions in this area included perspectives on specific aspects like foreshadowing and "productive interactivity" by *Cheong* et al; metrics for measuring character believability by *Gomes* et al. as well as a view on breaching the implicit

agreement of interactive storytelling by *Roth* and *Vermeulen*. The section was closed with a proposal for classifying and relating interactive digital narratives in the form of mappings by *Koenitz* et al.

Yun-Gyung Cheong (IT University, Copenhagen) presented "Modeling Foreshadowing in Narrative Comprehension for Sentimental Readers," a paper in which she, B*ae Byung-Chull* and *Daniel Vella* analyze foreshadowing in video games. They relate the term to Genette's concept of prolepsis and of advance notice and advance mention as well as seeding of a satellite in Chapman's nomenclature; a narrative technique to guide a reader's expectation and assumptions about the progression of a story. The authors are concerned with foreshadowing by sentimental readers as defined by Orhan Pamuk – more advanced, critical readers, who appreciate the craft and structure of narrative as well as the story by itself. They note since video games do not contain a fixed sequence of events like other media only a subset of video games can apply foreshadowing – those that embody an overall structure of progression in which player can actuate a unique sequence of events, an alterbiography in Calleja's terms. *You Have to Burn the Rope* and *Portal 2* serve as examples for video games that apply foreshadowing as a device of narrative affordances (Young et al. 2011), which let the user envision different outcomes to the current narrative. The authors conclude with the description of an experimental interactive fiction, in which they apply foreshadowing at various points in the game to study the effects on player's expectation and choice of the story progression.

Neil Suttie (Heriot Watt University, Edinburgh) presented "Theoretical Considerations towards Authoring Emergent Narrative" – authored with *Sandy Louchard*, *Ruth Aylett*, and *Theodore Lim* – that starts outlining the specific challenges for creators of emergent narrative (EN), which shifts the burden of narrative coherence to goals and characters traits embedded in autonomous software agents. The authors describe how this approach results in the difficult task of considering the assumed synergies of several software programs working together during the creating process. They propose Intelligent Narrative Feedback based on continuous simulation, which exposes the hypothetical narrative space to the author and provides recommendations as a means to create better EN experiences.

Arne Grinder-Hansen (Aalborg University, Copenhagen) presented a study undertaken with co-author *Henrik Schoenau-Fog* "The Elements of a Narrative Environment – Exploring User Reactions in Relation to Game Elements" on how users react to narrative environments and what this means for narrative construction. The study finds that users are drawn more to certain features of a virtual landscape (higher ground, water, green areas). In terms of narrative, Grinder-Hansen observes that users infuse encounters with anthropomorphic figures with meaning. To a lesser extent this happens even with objects that stand out in geographical placement or shape. The authors conclude that creators of interactive narrative need to consider the composition of virtual land-

scape and the placement objects in at as an additional factor that affects the narrative experience.

Ruth Aylett (Heriot Watt University, Edinburgh) presented "Suitability of Modelling Context for use within Emergent Narrative" authored with *John Truesdale*, *Sandy Louchart*, and *Helen Hastie* examining the question of an appropriate concept of context for an application in artificial intelligence narratives. The paper is concerned with contextual information to help autonomous agent make decision that are relevant in an EN. More exactly the authors aim to define the semantics of context within EN. They argue that there is a need for an "operational" definition that is neither too broad, nor too specific. The new definition is presented as a basis for future research.

Stacey Mason's (University of California at Santa Cruz, Santa Cruz) presented her lucid study "On Games and Links: Extending the Vocabulary of Agency and Immersion" – selected as the runner-up for the best paper award – which proposes extensions to the established analytic terms agency and immersion to facility a more fine-grained differentiation. She approaches her topic by differentiating between narrative immersion as defined by Murray (1997) and Ryan (2001) and mechanical immersion in the sense of Nakamura and Csíkszentmihályi's flow (2002). Next, she explains how diegetic choices affect story (in Chapman's definition of the word) while extra-diegetic choices affect the discourse of an interactive narrative work. The definition of agency as the ability to make "meaningful choices" (Murray 1997) is too broad a category, Mason argues, as this description fails to account for her differentiation between diegetic choices and extra-diegetic choices. Mason offers that extra-diegetic choices can lead to narrative immersion as in the case of hyperfiction narratives that do not offer the ability to actually make changes to the work. The difference between diegetic and extra diegetic agency becomes evident when we consider virtual space. The author argues that Murray's understanding of agency aligns with Hansen's (2004) definition of affect, a term describing how a player situates herself in virtual space by means of applying our understanding of real space. Affect, in Mason's view means the ability to move within a virtual space, to use props as intended and deal with virtual obstacles. Diegetic agency, Mason offers, reaches further and allows for changes to the narrative; performing "good" tasks in a game that change the player character and the outcome of the game then constitute diegetic agency, while the actions performed by the player – like swinging a sword – are affect. Within the context of a hypertext fiction the differentiation is less clear and depends on the perspective, Mason notes – clicking links is affect, while choosing one link over another constitutes extra diegetic agency. The latter Mason deems instrumental for the creation of a narrative experience that fully engages the user.

Ulrike Spierling (Hochschule Rhein-Main, Wiesbaden) presented "Production and Delivery of Interactive Narratives Based on Video Snippets" (authored with *Wolfgang Müller* and *Claudia Stockhausen*) an approach that aims at a middle ground between pre-produced content and fully procedural generation for interactive storytelling. They present their concept of dynamic ad-hoc playback

of video or audio snippets as an efficient and flexible approach towards authoring and describe first successful applications in creating conversational interactive stories.

Paulo Gomes (University of California Santa Cruz, Santa Cruz) presented his "Metrics for Character Believability in Interactive Narrative" paper – authored with *Ana Paiva*, *Carlos Martinho*, and *Arnav Jhala* – on metrics to measure character believability. The authors define perceived believability dimensions and discuss how they can be evaluated. Finally, they propose the following metrics: behavior coherence, change with experience, awareness, behavior understandability, personality, visual impact, predictability, social and emotional expressiveness.

Christian Roth (VU University, Amsterdam) presented a study "Breaching Interactive Storytelling's Implicit Agreement: A Content Analysis of Façade User Behaviors" – co-authored with *Ivar Vermeulen* in which they observe how interactive story experiences often fail to satisfy users' expectations when it comes to agency over story progression and an immersive experience while acting "in character." Consequently, players might often devise out-of character strategies that match the capabilities of the respective artifact. In a user study of *Façade* (Mateas / Stern 2005), they find their hypotheses mostly verified and note that in repeat plays, "staying in character" resulted in a more negative experience. Their conclusion is that current technology cannot fulfill user's expectation of an engaging narrative experience unless these are very carefully managed by the work's author.

Gabriele Ferrie (Indiana University, Bloomington) presented a paper "Mapping the Evolving Space of Interactive Digital Narrative. From Artifacts to Categorizations" authored with *Hartmut Koenitz*, *Mads Haahr*, *Tonguc Sezen*, and *Digdem Sezen*. The authors express the need for novel approaches towards the categorization of Interactive Digital Narrative (IDN) works. To this end, the paper proposes dynamic and multidimensional mappings and applies this concept in the form of an early selection of categorizations for IDN works across different approaches. In this way, the authors aim to answer the challenge to classification caused by constantly evolving artistic and technological approaches and the range of different analytical perspectives (from neo-Aristotelian perspectives to applications of post-classical narratology), which have been applied to IDN. The paper was followed by a workshop which offered an extensive discussion on the issues of terminology and classification in an interdisciplinary field.

Between Play and Narration

The sessions on the second day started with the section "Between Play and Narration", which was concerned with the creation of ludic situations in digital environments as a tool for an effective storytelling. Contributions in this area

included perspectives on visual representation and mise-en-scene, and a proposed annotation scheme for communication while experiencing an interactive narrative.

Ivan Girina (University of Warwick, Coventry) presented his paper "Video Game Mise-en-scene. Remediation of Cinematic Codes in Video Games" in which he discusses the relation between video games aesthetics and film. In this light, he argues for the relevance of film-related analytical and theoretical tools for video games and highlights scripted staging and the expressive lighting in current video games as examples of aesthetic practices related to cinematic presentations.

Altug Isigan (Izmir University) investigate the construction of narrative space in video games in "The Visual Construction of Narrative Space in Video Games." He uses the video game *Perspective* (Borgen et al. 2012), as an entry point for a discussion on how spatial properties are described. He reminds us that graphical elements have no intrinsic spatial properties and rather there are conventions like the codex style for text that do not have to be followed. Finally, the paper questions whether it makes still sense to maintain a categorical distinction between 2D and 3D games.

Mariet Theune (University of Twente, Enschede) presented "Acting, Playing, or Talking about the Story: An Annotation Scheme for Communication during Interactive Digital Storytelling" a paper written with *Jeroen Linssen* and *Thijs Alofs*. The authors investigate children's communication while playing with an interactive digital storytelling system. The authors propose an annotation system to record this kind of communication. Their system RxP is more fine-grained than Sawyer's or Fine's, and shows potential to inform the design of interactive storytelling systems.

Game Narrative

The next section, "Game Narrative" engaged in a dialogue with the relatively new discipline of computer game studies. Papers in this section discussed the specific affordances of electronic games in relation to narrative, discussing satire and propaganda in game narratives and a case of invisible agency.

Gabriele Ferri (Indiana University, Bloomington) presented a contribution "Satire, Propaganda, Play, Storytelling. Notes on Critical Interactive Digital Narratives" in which he looks at how video games by Molleindustria translate the textual genres of satire and propaganda and urges more research in this vein. He identifies different semiotic strategies and modes of discourse in the three games *Oiligary*, *Phone Story*, and *Tax Evaders* reaching from a more satirical strategy in the first to covert ideological voice in the second and direct propaganda in the third.

Sercan Sengün presented his paper on "*Silent Hill 2* and the Curious Case of Invisible Agency." He describes how the video game *Silent Hill 2* decides be-

tween different narrative endings by essentially creating a psychological profile of the player's behavior based on her actions. The author terms this rare narrative strategy invisible agency, which he proposes as an alternative to blatant choices and performance meters that track characters in a binary system of good / evil. As this kind of agency violates the "immediate feedback" criteria Sengün suggests that the commonly accepted definition of the term is incomplete.

Art and Narrative Applications

The third day sessions started with the section "Art and Narrative Applications", which combined perspectives from the field of digital arts, location-based performances and interactive digital narratives. Contributions in this section looked into the difficulties of telling travel stories while they happen, reported on storytelling and the use of social media in digital art installations, on a continuously developing interactive narrative and on how to generate stories with of morals.

Alex Mitchell (NUS National University of Singapore, Singapur) presented "Telling Stories on the Go: Lessons From a Mobile Thematic Storytelling System," a paper (co-authored with *Teong Leong Chuah*) in which he describes their experiences in designing and testing an interactive storytelling systems designed to aid tourists in telling stories while travelling. The authors describe their experimental system based on narrative themes and reactions observed in a user study. The study helped the authors to understand the difference between story gathering and story telling and that users wanted to have time to reflect before putting a story together. Users want inspiration rather than guidance, the authors conclude, which re-focuses the problem from recommendations in connection with an identified emerging structure to one of gathering raw material which will be made into a narrative at a later time.

Valentina Nisi (University of Madeira / Madeira Interactive Technologies Institute, Madeira) presented a contribution on "Storytelling and the Use of Social Media in Digital Art Installations" (authored with *Clinton Jorge*, *Julian Hanna Nuno Nunes*, *Miguel Caldeira*, *Giovanni Innela*, and *Amanda Marinho*) on the repurposing of a Solari Udine airport split-flap display as a medium for storytelling (nano-fiction) designed to evoke interest in the new purpose. The authors describe their experiment in sending stories to the display via Twitter, SMS and Facebook by both random passersby and published authors. The authors describe how a majority of the audience preferred to consume stories to contributing to them and describe the findings of interviews with passerbys.

Hartmut Koenitz (University of Georgia, Athens) presented "A Continuously Developing Interactive Digital Narrative" a paper authored with *Digdem Sezen* and *Tonguc Sezen*) which describe the IDN artifact *Breaking Points*. The works explores chaos theory in the sense of the effects of seemingly trivial choices.

The user is in the position of a young woman who feels trapped in a daily routine she would like to escape from. The narrative design presents the user with immediate and delayed consequences for a complex and more life-like experience. The project is also a study of authorial challenges and opportunities offered by different authoring modes, namely the switch from coding from scratch to the Advanced Stories Authoring and Presentation System (ASAPS) environment and the move to a touch-based platform.

Margaret Sarlej (University of New South Wales, Sydney) presented a study on "Generating Stories with Morals," co-authored with *Malcolm Ryan* that described a storytelling system capable of generating short stories that convey morals identified in Aesop's fables. The morals represented in their model are Retribution, Greed, Pride, Realistic Expectations, Recklessness and Reward. A user study confirms the effectiveness of conveying morals with their approach.

Applications and Analyses

This section featured advanced computational applications like automatic story clustering and the generation of various "tellings" from semantic representations as well as perspectives focusing on the user in relation to the author, in regards to perceived incoherence, and finally on user understanding as a key element in adaptive storytelling.

In a highly technical paper, *Michal Bída* (Charles University, Prague) presented work "Towards Automatic Story Clustering for Interactive Narrative Authoring" (authored with *Martin Černý* and *Cyril Brom*). The goal of this research is to enable semi-automatic evaluation of narrative systems able to generate many paths and different outcomes. As such systems are potentially overwhelming for human evaluators, the authors present a methodology to group and compare different narrative paths based on tension curve extraction and clustering of similar stories. Early results show good success in simple narratives, while complex narratives expose some limitations of the current approach.

Luis Emilio Bruni and *Sarune Baceviciute* (Aalborg University, Copenhagen) presented their contribution "Narrative Intelligibility and Closure in Interactive Systems" in which they aim to establish the goals of an IDN system as a necessary aspect in assessing a given work's narrative intelligibility and closure. They introduce Author-Audience distance (AAD) as the degree by which the intentions of the author match those of the audience; ideally the distance is small. Furthermore the authors define narrative intelligibility as the process in which the audience understands the meaning mostly as intended by the author, while narrative closure denotes a process in which the audience constructs their meaning independently from the author's intentions. However, the faithful reception of a narrative might not be the main intention of a particular IDN system and instead the author's goal can be in the focus on a certain topic, or

in the creation of a particular experience. An author has to define closure and intelligibility on both the level of the system and the narrative it embeds. At the system level the authors see both aspects as meaningful interaction, differentiated on the basis of authorial intentionality. At the narrative level intelligibility entails an understanding of the narrative as intended by the author, while closure consists of the experience of a complete narrative, independent of an intended understanding. On the basis of these distinctions, the authors differentiate three different types of broad design approaches for interactive narrative works 1) mediation of the embedded narrative is the goal of the system 2) goal of the system requires the narrative, but can be differentiated 3) narrative is only auxiliary to the goal of the system, for example in video game narratives where narrative is only present in the form of cut scenes.

Yun-Gyung Cheong (IT University, Copenhagen) presented a study "Player Perspectives to Unexplained Agency-Related Incoherence," co-written with *Miika Pirtola*, and *Mark J. Nelson*. They question conventional wisdom on unexplained agency-related incoherence (UARI) in video game narrative. They quote literature urging to avoid UARI, but also authors who see it as a productive device and note the lack of empirical evidence for either position. To further investigate the problem, Pirtola et al. conduct a user study in which participants played two especially designed video games. The findings are that players expressed three different perspectives: acceptive-ludic, in which anachrony is accepted as part of the game, acceptive-diegetic, in which UARI is seen as part of the game story, and rejective-logical which views UARI as an error in the game's causality.

Sharon Lynn Chu and *Francis Quek* (Texas A&M University, College Station) presented a paper written with *Joshua Tanenbaum* "Performative Authoring: Nurturing Storytelling in Children through Imaginative Enactment." They describe the advantages of enactment as part of an educational application of interactive digital narrative. The authors present an empirical study that supports embodied expression as a motivational device that helps children tell stories instead of having to deal with difficulties of writing text. The additional motivation is especially advantages to overcome the effects of a period of reduced development often referred to as the "Fourth-grade Slump."

Elena Rishes and *Stephanie Lurkin* (University of California Santa Cruz, Santa Cruz) presented "Generating Different Story Tellings from Semantic Representations of Narrative," written with *David K. Elson*, and *Marilyn A. Walker* on the experiment in combining several off-the-shelf software tools to create different textual outputs from existing semantic representations. The authors link *Scheherazade* – a software representing narratives in the form of a story intention graph – to a Personage, a natural language generation (NLG), which can create variations based on the idea of personality traits such as shy or laid-back. Their method is in constructing translation rules between the two different native representation formats, which they verify with a corpus of Aesop's fables.

Garber-Barron (Rensselaer Polytechnic Institute, Troy) presented a paper co-authored with *Mi Si*, "Role of Gender and Age on User Preferences in Narrative Experiences" which investigate user's reaction to topical changes during the course of an interactive narrative. Their digital storytelling system introduces new topics from time to time, and elaborates on the topics the audience has previously shown interest on. In a user study they find women to prefer a more gradual shift in narratives in comparison to men.

The best paper award was given to *Sharon Lynn Chu*, *Francis Quek*, and *Joshua Tanenbaum's paper* "Performative Authoring: Nurturing Storytelling in Children through Imaginative Enactment" for exceptional presentation, thorough empirical work and novel application. *Stacey Mason's* innovative proposal "On Games and Links: Extending the Vocabulary of Agency and Immersion in Interactive Narratives" was selected as the runner-up.

Two panels, "Professional perspectives on Interactive Digital Storytelling" and "Current and Future Trends in Interactive Digital Storytelling", complemented the paper presentations providing an opportunity for the audience to engage in a discussion with professionals and researchers in the field.

This year, the ICIDS conference also featured an interactive art exhibition for the first time in the series. It aimed at presenting a wide range of practical demonstrations, including artistic projects, experimental designs, and narrative video games. Amongst the many exciting pieces, the exhibition hosted "CAVE! CAVE! DEUS VIDET" by the Italian duo *We Are Müesli* (recent winner of the Bosch Art Game international competition 2013) and "Occupy Istanbul" on the Gezi park protests by the film director *İnan Temelkuran* and *Hartmut Koenitz*.

On the 4th day of the conference, three full day and five half-day workshops were held at the Galata Campus of Bahçeşehir University. They provided the opportunity for conference participants, as well as for selected students from the local design program, to attend practical sessions in small groups. The range of topics was wide, from natural language processing techniques in computer games to the educational use of live-action role playing games (LARPs), and to creative digital performances based on spam emails.

Conclusion

From the perspective of narrative theory interactive narrative remains a productive, yet challenging field. Two broad trajectories describe the challenges – the specific qualities of digital media, and the realities of a field, in which the analytical objects are in constant flux as a result of technical advancements. In the first case, the procedural and participatory aspects offer resistance against an unqualified usage of vocabulary established to analyze more traditional narrative forms. Here the application of narrative theory is most convincing when heeding Aarseth's warning against premature "theoretical imperialism." (1997,

16) However, this also means there is still much space for innovative inquiry and theoretical development. In the second case, there might be no practical limit for advances in the field, as the more technical and empirical oriented papers testify. Consequently, a stable corpus seems elusive and new theoretical tools – for example mappings – need to account for that.

As in previous ICIDS conferences the proceedings are published by Springer and are available both in print and in ebook format as part of the Lecture Notes in Computer Science series: Hartmut Koenitz et al. (2013) (Eds.): *Interactive Storytelling: 6th International Conference, ICIDS 2013, Istanbul, Turkey, November 6-9, 2013, Proceedings*. Berlin / Heidelberg.

(URL: http://link.springer.com/book/10.1007/978-3-319-02756-2)

The conference website is at http://gamesandnarrative.net/icids2013 while http://www.icids.org offers more info on past and upcoming ICIDS conference.

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