

Towards Serendipity and Insights in Movies and Multimedia

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Abstract. This position paper provides an overview on my interest in the phenomenon of serendipity and underlying insights, and the main research projects related to its support in movies and multimedia, mainly through the access, visualization and discovery of information and their relations in unconventional ways. One example of serendipity in the path of this research is described.

Keywords: Serendipity, synchronicity, insights, creativity, visualization, overview, discovery, exploratory browsing, multimedia, movie, video, iTV.

1 Serendipity-Related Interests

I am interested in understanding the serendipity phenomenon and its potential, and in exploring the design and evaluation of interactive systems to encourage and support serendipity and insights, especially in, or starting by, interactive multimedia spaces and movies.

We have been witnessing a rapid growth of video-based multimedia spaces that are getting richer and more accessible everyday over the Internet and through iTV. Video itself is a very rich media type, including images, audio, and sometimes subtitles, that change in time. Some researchers have emphasized the importance of developing methods to extract and highlight interesting features in videos, to summarize and visualize them, helping to deal with this complexity, to express its richness, to find meaning in information, and to help finding information. I believe that this approach, enriched with some support for finding novelty or the unexpected in serendipity browsing, can lead to insights, creativity and significant discoveries.

In the ImTV project, about on-demand immersive-TV for communities of media producers and consumers, the support to finding relevant and possibly unexpected video-based content created by traditional producers or the users can be of great value. For example, the crossmedia e-iTV system [1] has been designed in this context to generate via iTV, PC and mobile devices, personalized web contents, to be further accessed, anytime, anywhere, from any one of these devices. When watching a TV program or a video, the viewers can select topics that are presented and that catch their attention in the video content (e.g. what the characters are talking about), or information about the program (e.g. actors, director, shooting locations), and get a

short piece of information right away or get a more detailed webpage, later on, created with information about all the items selected during the viewing. It addresses the need to explore what catches the viewer's attention, possibly capturing a serendipitous connection, with the flexibility to support the most adequate cognitive modes for the viewer in different contexts of use.

In video spaces, movies have been receiving a special attention in our research lately, especially in ImTV and VIRUS projects. Movies have a great power to express and induce emotions. They can influence our mood, our health, inspire us and they can create a difference in our lives [2]. In this context, we are working with the aim to catalog, access and explore movies based on their content, and the emotions expressed in the movies or felt by the viewers [3], [4], [5]. Viewers can get overviews of the movies in these different perspectives (e.g. audio events, audio mood, topics or sentiment in subtitles, and felt emotions) at the level of the movies space or the individual movies, can compare them, and access related information. This approach may support insights [6], [7], [8] about one movie or the relations among movies, by providing information and overviews that are usually not available or explicit, and visualizing them in innovative, personalized and possibly inspiring ways [3], [4], [5].

This work comes in the sequence of previous and related work, e.g. [9], [10], [11], where the focus in cognition, affect, aesthetics, creativity and meaning has been serendipitously coming into the picture.

2 Example of Serendipity

For more than a dozen years, I have been conscious about serendipity in my life, although the first contact I had with the concept was under the name of synchronicity [12], [13]. By then, I had the notion that it had been there all along, but I just did not know it was a concept with a name and a recognized value beyond that of coincidence, and found it quite interesting and meaningful. Aligned with this expanded notion, that only after watching the 2001 movie *Serendipity* I discovered it had this other name, I started to become more aware of this phenomenon in my life. So, there are some serendipitous experiences that I could tell, but I decided to focus on the one that attracted me to this workshop and got me writing about this topic.

Although I have had such experiences in my life, affecting my personal and professional life, serendipity was never explicitly a topic of my research. But the idea had already popped in my mind occasionally, and especially after seeing other areas I treasured 'coincidentally or not' becoming more present in this context. However, this one seemed too remote. Then, last September, while zapping on TV, I saw a Portuguese professor and researcher in computer science that I know being interviewed. This was enough to stop zapping for a while. Then I understood he was talking about serendipity, and that was enough to have me watching the rest of the interview. He had been researching in this topic - so it was possible. But I understood it was in the context of search engines - not so much my research area.

About seven months later, when going through the INTERACT webpage, a conference I was already going to attend, the title of this workshop "Encouraging Serendipity in Interactive Systems" caught my attention, so I read about it and

watched the video on the page. The concept was being approached from an HCI perspective, closer to my field of research. But since I was not working specifically in this topic, it was still a remote idea to participate in the workshop. Later, I came back to the webpage to check other info and noticed it again, and the deadline: it was the same date as another conference I was planning to submit a paper to – so definitely out of the question. When I was writing this very paper, working on the related work, I came across a paper [14] and a PhD thesis [15] that caught my attention, focused on music collections, exploratory and... serendipity browsing. From this perspective, more related to what we were doing, this concept and our work started to have a new meaning, closer and more aligned, and I ended up writing about serendipity browsing in a paper [5] for the first time in my life. Also, I noticed that this work referenced a paper [6], and this author's surname sounded familiar, but I was not recognizing the 'bell that was ringing'. The next day, I received an email announcing a one week extension for the deadline of this workshop, making it feasible. And when I revisited its website, I partly recognized the bell from the previous day – that paper was from one of the organizers. But I had the feeling I knew the name for a longer time, another context, but where and when? – then, suddenly, it all became clear: yes I knew that name, not from that website alone, I had met the author personally at the ACM Hypertext conference one year ago, in a different area and unaware of this other common interest we shared in different contexts. The way this all happened caught my attention, made it more meaningful, and hinted for some new perspectives about what I was already doing and might do in future research, and definitely about the possibility to participate in this workshop after all, and find out what's around the next corner.

This was a serendipitous experience itself, due to the accidental nature, the delight and surprise in the events, when pursuing something else, and the unexpected connections and insights that followed. As Pasteur stated: "chance favours the prepared mind" [16]. I was already aware and fond of serendipity and working at the underlying domain of interactive information systems. But there was an incubation period [7], [8] since I grew this interest in my personal life, till I realized the possibility to support it and research it from my professional activity, with some triggers in the way helping to make the bisociations [8], [17] and creating the conditions to make it happen. In this process, I came to realize that to some extent I was already working in the support for serendipity, but just didn't know it. And this insight of awareness created a new perspective and direction.

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References

1. Prata, A., and Chambel, T.: Going Beyond iTV: Designing Flexible Video-Based Crossmedia Interactive Services as Informal Learning Contexts. In Proc. of EuroITV'2011: 9th International Conference on Interactive TV and Video: Ubiquitous TV, Lisbon, Portugal, June 29-July 1 (2011)
2. Chambel, T., Oliveira, E., & Martins, P. 2011. Being Happy, Healthy and Whole Watching Movies that Affect our Emotions. In Proc. of ACII'2011, fourth International Conference on Affective Computing and Intelligent Interaction. Memphis, TN, USA, Oct 9-12 (2011)
3. Oliveira, E., Bonovoy, M., Ribeiro, N., and Chambel, T.: Towards Emotional Interaction: Using Movies to Automatically Learn Users' Emotional States. In Proc. of INTERACT 2011 13th IFIP TC13 Conference on Human-Computer Interaction, Lisbon, Portugal, Sep 5-9 (2011)
4. Oliveira, E., Martins, P., and Chambel, T.: iFelt: Accessing Movies Through Our Emotions. In Proc. of EuroITV'2011: 9th International Conference on Interactive TV and Video: Ubiquitous TV, Lisbon, Portugal, June 29-July 1 (2011)
5. Martins, P., Langlois, T., and Chambel, T.: MovieClouds: Content-Based Overviews and Exploratory Browsing of Movies. In Proc. of Academic MindTrek'2011, Tampere, Finland, Sep 28-30 (2011)
6. Toms, E.: Serendipitous Information Retrieval. In Proceedings of the First DELOS Network of Excellence Workshop on Information Seeking, Searching and Querying in Digital Libraries (2000)
7. André, P., schraefel, m. c., Teevan, J., and Dumais, S. T.: Discovery Is Never By Chance: Designing for (Un)Serendipity. In: ACM Creativity & Cognition' 2009, Berkeley, CA, USA, Oct 26-30 (2009)
8. McCay-Peet, L, and Toms, E.: The Process of Serendipity in Knowledge Work. In Proc. of IliX'2010, 3rd symposium on Information interaction in context, New Burnswick, NJ, USA, Aug 18-21 (2010)
9. Chambel, T., Correia, L., Manzolli, J., Miguel, G.D., Henriques, N.A.C., and Correia, N.: Creating Video Art with Evolutionary Algorithms. Special Issue on "Technology and Digital Art", Computer & Graphics Journal, 31(6), pp.837-847, Elsevier, Dec (2007)
10. Rocha, T., and Chambel, T. VideoSpace: a 3D Video Experience. In Proceedings of Artech'2008, 4th International Conference on Digital Arts, Porto, Portugal (2008)
11. Chambel, T., and Martinho, J.: Interactive Visualization and Exploration of Video Spaces through Colors in Motion. Chapter in Artur Lugmayr, Heljä Franssila, Pertti Näränen, Olli Sotamaa, and Jukka Vanhala (Eds.), "Media in the Ubiquitous Era: Ambient, Social, and Gaming Media", IGI Global. (In Press)
12. Chopra, D.: The Spontaneous Fulfillment of Desire: Harnessing the Infinite Power of Coincidence, Three Rivers Press (2004)
13. Proffoff, I.: Jung, Synchronicity, and Human Destiny: C.G. Jung's Theory of Meaningful Coincidence, Three Rivers Press (1987)
14. Chen, Y., Hoyer, M., and Butz, A.: CloudMonster: Support Flexible Browsing and Searching within Personal Music Collections. Proc .of INTERACT'09, Part I, 428-431 (2009)
15. Chen, Y.: Exploratory Browsing: Enhancing the Browsing Experience with Media Collections, PhD thesis, Ludwig-Maximilians-Universität München, June (2010)
16. Roberts, R.M.: Serendipity: Accidental Discoveries in Science. New York: Wiley VCH (1989)
17. Rosenman, M.: Serendipity and Scientific Discovery. Journal of Creative Behaviour, 22(2), 132-138. (1988)