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Conference Report: AISB Members Workshop VII: Serendipity Symposium

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On the 15th June 2017, a diverse group of researchers in computing, arts, sciences, and other fields of cultural endeavour met at the Waldegrave Drawing Room, St Mary's University, to discuss serendipity – “the art of making an unsought finding” [11]. The core goals of the symposium were to relate various understandings of serendipity from different disciplines, and to discuss contentious questions such as whether/how serendipity can be supported or simulated by computational means.



Gathered outside Strawberry Hill House

The organisation of this symposium comes from a series of events that were in themselves highly serendipitous. We began researching serendipity in the context of computational creativity some years ago [8], and it formed one of the research themes in the recent COINVENT project.¹ We developed a paper that has had a chequered and colourful history with journals, and which is currently available as a preprint [2].

We had long hoped to run a symposium and to invite other researchers who have studied serendipity, so that we could learn from them. Our planning got serious when one of us gave a keynote talk at a conference in Korea and met eminent serendipity scholar Pek van Anandel in person.² Over the following months, further ideas drifted in. We realised it was almost the 50th anniversary of the Institute of Contemporary Art (ICA)'s influential Cybernetic Serendipity exhibition in London in 1968, curated by Jasia Reichardt.³

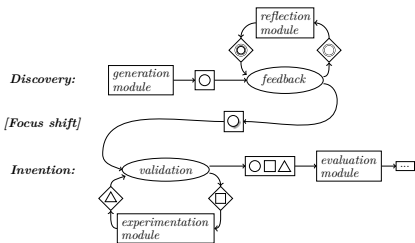
¹http://cordis.europa.eu/project/rcn/109898_en.html

²<https://smartconnected.world/2016/06/28/keynote-speeches/>

³<https://www.ica.art/whats-on/cybernetic-serendipity-documentation>

So we had some idea of who we would like to invite as keynote speakers. One of us noticed that Horace Walpole’s gothic castle Strawberry Hill is located in southwest London and suggested that we might include a tour in the programme. Walpole was the person who invented the term serendipity in 1757, and it seemed only fitting to make a pilgrimage back to the source (as it were).⁴ Another suggested that the AISB Member Workshop series could provide financial support. When we realised that the coordinator of the workshop series was based at St Mary’s University and that St Mary’s University owns Strawberry Hill House we were impressed. We had studied serendipity, but here it was first hand.

After Bergson [2] and André et al [1], we understand serendipity in two main phases: *discovery* and *invention*.



Serendipitous Discovery and Invention

In our process diagram, the *generation module* acts as a source of ideas (e.g., “a tour of Strawberry Hill House would be nice”). The *reflection module* processes these ideas and expands them iteratively (e.g., “the AISB Member Workshop series might help us get

there”). At some point, an iteration of the feedback process surfaces something that is worthy of focused attention (e.g., “the coordinator of the workshop series is based at St Mary’s University, and they own Strawberry Hill House!”). This kicks off the invention phase. At this point there is still considerable work to do.

In our model, invention is driven by the *experimental module*. We were lucky that Yasemin J. Erden joined us as the local organiser, and wish to highlight here her careful attention to planning. We were pleased that both of our “first pick” keynote speakers, Pek van Anel and Jasia Reichardt, agreed to join us. St Mary’s elegant Waldegrave Drawing Room met our requirements for space and infrastructure. Invitations for contributed talks were circulated to likely attendees, whose work we knew from our paper, and to various mailing lists. We eventually assembled a program with 2 keynotes, 9 short talks, and 20 total registrants.

The proof of the pudding is in the eating – and the part of the event that corresponds to the *evaluation module* in our diagram begins with the symposium itself.

Writers Workshop The first part of our programme was a Writers Workshop in which we invited participants to comment on our preprint [2] with an eye to improving it, and to establish some common ground for the symposium. Writers Workshops follow a standard outline [5], and allow for shared en-

⁴“I once read a silly fairy tale, called *The Three Princes of Serendip: as their Highnesses travelled, they were always making discoveries, by accidents & sagacity, of things which they were not in quest of*” [14], cf. [4].

agement with work-in-progress. Authors can improve their work by learning from unexpected feedback [1].

A moderator aims to help participants focus on how the paper can be improved. Readers focus on describing what they found “in” the paper whilst reading [3]. Erden did an admirable job as moderator. The conversation largely focused on a contentious question: can we support serendipity by computational means?

Van Anel pointed to the fuller context of a quote we took from his paper [11, p. 646] (emphasis added):

Like all intuitive operating, pure serendipity is not amenable to generation by a computer. The very moment I can plan or programme ‘serendipity’ it cannot be called serendipity anymore. *All I can programme is, that, if the unforeseen happens, the system alerts the user and incites him to observe and act by himself by trying to make a correct abduction of the surprising fact or relation.*

Van Anel insists that it is impossible to program intuition, because (as he put it in his talk later that day) “Intuition is to anticipate *without being able to make that explicit*, in prospect, and even in retrospect” (emphasis added). Given the format we did not attempt a rebuttal, but did point to quotes from our paper that show that we are concerned with preparing the conditions that make serendipity more likely to happen. We referred to a famous quote by Louis Pasteur [7, p. 131]: “In the fields of observation chance favours only

the prepared mind.” Other feedback we received in the workshop will help us structure the paper – in particular, participants suggested that the paper is really three surveys: *models*, *cognitive foundations*, and *systems*.

Highlights from the day’s talks

Serendipity is defined differently across disciplines, and one goal of our symposium was to make these differences more transparent.

Mark Nelson contributed significantly to this goal by comparing different definitions of serendipity in a wide range of systems within AI planning, ranging from critical NASA systems focusing on serendipitous planning success or failure, to Erik Mueller’s computational model of daydreaming.

Claudia Chiriță described her thesis work on concept discovery in a service-oriented computing context, and explained the role of loose constraints and search in producing unexpected but interesting outcomes. In particular, she stressed how a serendipitous *focus shift* can come about through the dynamic interaction of components with non-binary truth systems.

Diarmuid O’Donoghue described his work on the *Dr Inventor* EU project,⁵ and their efforts to simulate the serendipitous discovery of analogies between papers in the scientific literature. He considerably contributed to the symposium’s goals by bridging between the arts and sciences, and describing means to overcome inhibitors to creativity.

These efforts were wonderfully complemented by keynote speaker Jasia

⁵http://cordis.europa.eu/project/rcn/111242_en.html

Reichardt, giving us a first-hand impression of how artistic and scientific efforts were brought together in the 1950s. This started an era of intense interdisciplinary collaboration which eventually also led to the aforementioned 1968 landmark exhibition “Cybernetic Serendipity”. In her talk, Reichardt focused on the beginnings of kinetic art in Paris, the launch of the Experimental Workshop in Tokyo, and the Gaberbocchus Common Room in London, where artists and scientists started collaborating (long before *E.A.T - Experiments in Arts and Technology* in New York, and with a different structure).

In our second keynote, Pek van An del presented his research into serendipity, engaging the audience with “four practical jokes with one spoon and one coat” and other props, also touching on hunting, abduction, the origin of X as a variable, the meaning of the terms accident and sagacity, Francis Bacon’s Hunt of Pan, Charles Goodyear’s faith, and the legitimacy or lack of the same of Walpole and Hamlet.

Colin Johnson illustrated how shortcomings in early information retrieval systems gave rise to serendipitous discoveries. As the main focus of his talk, he hypothesised how we could bring such “shoddyness” back into search, drawing on set relations, prototype theory and concept linking.

Elaine Ohanrahan talked about the biography and artwork of her father, Desmond Paul Henry, and the role of serendipity in both his life and art. She

showed examples of his drawings made with imprecise mechanical techniques⁶, and compared them with the work of Jack Tait and Jackson Pollock.

Eilidh McKay described her notion of a serendipitologist – someone who is seeking to provide a platform to collaborate with serendipity. She described how the concept of serendipity influenced her studies, her dissertation research (including building a boat and a harmonograph that she subsequently put in the boat), and her subsequent career in “social serendipity” as a co-founder of *The Project Cafe*.⁷

Abigail McBirnie began by telling us about serendipity in the thought of Eugene Garfield, who founded bibliometrics to support “systematic serendipity”. In her practice-based talk, McBirnie provided us with insights on how modern bibliometric tools based on high-performance computing, big data and data analysis can be used to find, e.g., people who we are not collaborating with but potentially should be.

Stephann Makri talked about empirical research on serendipity in “information encountering” in the web, using a think-aloud study with 45 computer science students who were carrying out their own self-chosen information tasks. He also discussed the oxymoron of designing for, or even designing to ‘create opportunities for’ or ‘facilitate’ serendipity which complemented our previous discussions on support creativity in a computational context.

In the last talk of the symposium, Lorenzo Lane presented his reflections

⁶<https://www.flickr.com/search/?text=Desmond%20Paul%20Henry>

⁷<http://theprojectcafe.weebly.com/>

on the role of chance and loose constraints in mathematics research. He quoted from ethnographic field work at 4 European mathematics institutes, where respondents described their “random walks” through the mathematical landscape, and their informal strategies for interaction and sketching.

Visiting Strawberry Hill House

The famous letter to Horace Mann would have been written at Walpole’s house in Arlington Street, but the architecture of Strawberry Hill House is a testament to the way the man thought, and is where he did much of his work.



Round Room (photo by Luba Elliott)

On the tour we learned about another coinage of his: *gloomth*, a word for soft, shadowy, light used to create atmosphere, the kind you would experience when entering a gothic chapel in the late afternoon. As the tour followed shortly after the two keynotes, we were

reminded of some of Frank Malina’s images, and could not help but give some attention to Walpole’s sense of theatre.

Some words in conclusion According to the OED, the term *bore*, in its affective sense, came into use around the same time as the term serendipity, showing the growth of attention to attention in the mid-18th Century. In this connection, David Foster Wallace referred to L. P. Smith’s theory [10], which “posits certain neologisms as arising from their own cultural necessity” [13, p. 387]. Like another 18th C. figure – Voltaire’s *Zadig* [12] – our work on “modelling serendipity in a computational context” has led us on many fateful adventures, and we have learned a lot. Next year is the 50th anniversary of “Cybernetic Serendipity” and we hope to participate in a number of follow-up activities, e.g. a symposium at the AISB Convention 2018.

We certainly found the recent Members Workshop anything but boring. In studying serendipity, we do not expect to “re-create” the excitement of previous eras, but, rather, hope to create anew, things, tools, and platforms suited to the needs of the time we are currently living in – with an eye to both past and future.

Acknowledgements

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